MEDICAL REPOSITORY,

FOR

AUGUST, SEPTEMBER, AND OCTOBER, 1805.

An ACCOUNT *of the* EPIDEMIC DISEASE *which prevailed at Augusta, and its Neighbourhood, in the State of Georgia: Communicated in a Letter from Dr.* DENNIS SMELT *to Dr.* MILLER, *dated Augusta, May* 13, 1805.

MR. Nesbet, a merchant of this city, has been so polite as to submit to the faculty here, a certain number of medical queries propounded by you for our consideration. I have been a practitioner of medicine in Georgia upwards of fifteen years, and the greater part of that period engaged in an extensive practice. The bilious remitting fever in this climate may be said to be rife from the first of June to the first of October; after this time, although the bilious symptoms do not entirely subside, yet they are accompanied with higher marks of inflammation, and often require a pretty liberal use of the lancet to subdue them.

From June last to the first of August, I did not remark any anomalous symptoms; but, at the same time, observed to those with whom I had medical conversation, that the disease assumed a degree of obstinacy rather unusual so early in the season. You are to understand that Augusta is favourably situated for the production of miasmata; it stands upon an extensive flat plain, surrounded by high hills on the north and west, on the south and east nearly encompassed by a large swamp, which is generally in the autumnal months covered by stagnant water; the soil very rich and marshy, consequently water remains long upon the surface, and speedily becomes putrid from an excessive hot sun. We are in latitude 33 degrees N. Dry and wet seasons have much influence upon our diseases; in the former they recur more frequently, and require a more energetic treatment; in the latter, we meet with fewer cases, and they often yield to mild remedies. Southerly winds prevail here in summer,

therefore the putrid effluvia that are generated in pools are easily and readily wafted to the inhabitants. I have generally considered this as the common source from whence the epidemic takes its origin. In this opinion I am fortified, by the removal of patients to the adjacent sand hills, where they recover quickly, and are prevented from similar attacks by remaining stationary. About the commencement of August we had heavy rains, and the mercury was very high; to this succeeded a drought of long continuance. Now fever began to show itself in all directions, and with aggravated symptoms. Permit me here to remark, that although the cases were at this juncture very numerous, the symptoms highly malignant, and, in many instances, death supervened; yet I did not suppose for a moment that the prevailing epidemic came under any other denomination than bilious fever, of a higher grade than usual.

In this opinion I am confident, from what took place in the country immediately above us, the situation of which is high, water good, and the air till within a few years very salubrious. Some ingenious practitioners in the country last mentioned are of opinion, and I think their judgment correct, that the morbid change herein referred to is to be explained upon simple grounds. Till within a few years the commercial staple of the upper parts of Georgia was tobacco, a plant which is supposed to contribute as much to health as any other known. For obvious reasons this staple has been changed to that of cotton. This change, although it may fill the pocket of the honest planter, yet it will render him poor in many other respects. Independent of the numerous insects which this plant generates, its seed, from ample experiment, is found to be an excellent manure. It is the practice to cover the surface of the field with cotton seed in the winter; in the spring it is superficially ploughed in; and, in the summer, from the great heat of the sun, and the seed then being in a state of putridity, we may easily account for more cases of fever, symptoms highly malignant, and more unhappy terminations. Whether may not putrid cotton seed in a southern climate produce a malignant fever as easily as rotten coffee did in 1793 in Philadelphia, in the latitude 40 degrees? It is the opinion of many authors, that putrid matter, whether animal or vegetable, propagates fever; and it is evident, that the margin of a dead swamp can do it equally well. From what we have seen, I think there can be no doubt that the internal causes which exist among us

are numerous enough to account for the great calamities we have experienced.

If we look to the Ganges, the Nile, and the Missisippi, we find yellow fever, although it may be sometimes under a different appellation. This proves to a demonstration, that pestilential fevers may, and do exist, in all countries where the concurring circumstances are brought into action. I am sorry it is not in my power to give you a satisfactory answer as it respects the number of deaths, as I did not keep a list of the cases, being sometimes sick myself. At all events, they were much more numerous than in any preceding year, say as two or three to one. An intelligent man in the country above alluded to, informs me, that he is convinced that more persons died there the last fall than had done for the five preceding years. The fever herein attempted to be described terminated about the first of October, after much rain, thunder, and cool nights. If I am asked whether it is my opinion the fever originated from the common local causes that surround us, I answer in the affirmative. If asked whether it was connected, either directly or indirectly, with foreign contagion, I answer decidedly in the negative. Nor do I think it was contagious from one to another in the medical meaning of the word. Such symptoms as have been noticed by the celebrated Rush, attendant upon this fever in its last stage, thank heaven, seldom exist here in a high degree, though, I think, in one or two cases we discovered a discharge from the stomach, that approached nearly to what has been denominated "*black vomit!*" I do not recollect to have met with hæmorrhagy or petechial spots: where the disease proved mortal, the intestinal discharges were very dark and fœtid.

After premising this much, it may perhaps not be improper to touch lightly upon the *methodus medendi*. Physicians of great eminence differ much upon this ground: Would to God that some favourite son of Hippocrates had, before this, marked out a path leading to a cure. I fear this important and arduous task is destined to be left for our successors. From the immense number of deaths that have taken place in our large cities, compared with the number of cases, it appears to me that no one treatment (however able the physician) has been crowned with much success. It is not for me to say, whether the monstrous depleting plan adopted by great men in many parts of our country has been beneficial or not. In the school where I was educated (Bri-

tain), men of the first rank, at that time, very strongly combated this doctrine. In the first seven years of my practice, I think I did not bleed seven times for the cure of the common bilious fever incident to warm climates; by this I mean (if I may be allowed the expression) those that were climatized. Persons coming among us from northern countries, in high health and vigour, are excepted; they, in many instances required the lancet, and it was successfully used. As it is admitted that yellow fever is not a disease, sui generis, but, on the contrary, the common malady of all hot countries, heightened only by contingent and local causes, which produce deleterious effects, upon what just principle then are we to reconcile this great innovation in practice? I have only to observe, that my present practice, in a slight degree, savors of the new school; and am confident, and feel pain under the expression, that it is by no means as successful as it formerly was. I have never entertained an idea that the fever in question carries with it that high and inflammatory diathesis that many able men have supposed; therefore have bled sparingly, but been liberal in the use of calomel and jalap.

A CASE *of unequal* EXCITEMENT, *in which* VENESECTION *appeared to be the chief Remedy: In a Letter from Dr.* AARON C. WILLEY, *to Dr.* M. FOOT, *dated East-Haddam, May* 18, 1804.

ON the evening of April 13, 1804, Mrs. *Beckwith*, aged 39 years, was seized with violent cramps in the stomach and extremities. Being called to her aid, I administered large doses of laudanum and camphor, but without the desired effect. I then opened a vein, and drew blood till the cramps and pain entirely ceased. The next day she complained of pain in the head and side. I took away more blood, which gave her ease. After this she resumed her domestic vocation, but still complaining of some pain in the head, and great *coldness*. Thinking, however, that she should soon get better, she neglected to employ medical assistance; but her illness gradually increasing, she was unable, by the 26th inst. to conduct her family business, and the next day submitted herself to the physician's care.

Friday 27th. I found her with excessive pain in the anterior and posterior part of the head, pulse at 70, and not

strong, great coldness of the hands and feet, body quite cold by turns, at no time very warm, veins apparently empty and torpid, costiveness, head moderately warm, countenance florid, vessels of the albuginea oculi a little turgid, impatience of light and sound, vigilance, skin dry, tongue moist and slightly furred. After an attentive examination of the case I proceeded with the following *methodus medendi*. Opened a vein, but got no more than six ounces of blood, and that with much difficulty; mercurial pills, which were repeated in the course of the day to more than double her usual dose; small and repeated doses of tartrite of antimony; epispastic to the back part of the neck.

Saturday 28*th*, *Morning*. No material alteration; cathartic had not operated; M. M. ℥ss ol. ricini; tartrite of antimony as yesterday; cold earth to the head;* warm fomentations of the bowels; stimulant applications to the bottoms of the feet.†

Monday. Cathartic had not operated yet; enemata deemed requisite, but nobody at hand that would give them. She observed that flowers of sulphur generally moved her bowels sooner than any other purgative, accordingly gave two drachms.

Four o'clock P. M. More general warmth; veins more full; drew sixteen ounces of blood. This produced faintness, sweat, and an ejection from the stomach. Cathartic operated immediately.

Evening. Head relieved, pulse much the same, skin dry; cathartic evacuated green and black bilious matter. M. M. tartrite of antimony, carbonate of pot-ash.

Sunday 29*th*, *Morning*. Pain in the head returned; pulse weak and at 65; skin dry; pain in the back and region of the pelvis;‡ coldness of the extremities and other parts as great as ever; M. M. opened a vein in the arm, but could get hardly a tea-spoonful of blood; gave a dose of tincture of opium, which eased the pain in the pelvis; four grains of mild muriated quick-silver; carbonate of pot-ash; cold earth to the head; warm fomentation of the bowels and lower extremities; vesicatories to the legs.

* I have often used this in violent head-aches with great success. Does it operate by means of any peculiar properties, or only by the subduction of caloric?

†These were continued throughout the subsequent stages of her disorder.

‡ She had several years been affected with a complaint in this part, owing to the management of an unskilful accoucheur.

Eleven o'clock A. M. Shaved the head, and fomented with tepid water, in conformity to the directions of Darwin; but this, however, was soon changed for cold, which had much the best effect; opened a vein, and got four ounces of blood, which gave trifling ease; gave four grains of mild muriated quick-silver; ordered an irritating clyster.

Four o'clock P. M. Sanguiferous system more active; opened a vein, and drew sixteen ounces of blood, which afforded much relief to the head. At seven o'clock an electric cloud passed over, from which were some heavy explosions.

Eight o'clock P. M. Pain in the head considerable; pulse more full and strong than had been perceived before, M. M. took away eight ounces more of blood; pulse full and pain abated; gave a small dose of flowers of sulphur and acidulous tartrite of pot-ash.

Two o'clock A. M. Was called; found her puking and purging, with much distress in the bowels; M. M. tincture of opium, and essential oil of peppermint, which soon procured an alleviation of the symptoms.

Monday 30th, seven o'clock A. M. Puking and purging, with distress in the bowels; copious discharges of green and dark coloured bile; pain in the head tolerably easy except when aggravated by retching; pulse at 90, and considerably strong; M. M. infusion of columbo root, tincture of opium. This last was frequently rubbed into the pit of the stomach, succeeded by cloths wet with aromatic tincture.

Nine o'clock A. M. Bloody stools and tenesmus, with every diagnostic symptom of dysentery. The stomach ejected alkalies, and every other medicine I prescribed, except small doses of the following mixture: ℞ *Tinct. opii. Elix. Camphor. ana. p. æ.* direct clysters, impregnated with laudanum and alkali, after every alvine discharge; emplastrum cantharidum between the shoulders, and the bowels rubbed with the tincture of opium.

Six o'clock P. M. Dysenteric symptoms much abated; some sleep; the same treatment continued.

Tuesday, May 1st, six o'clock A. M. Had but one stoo last night; some sleep; retching much better; pulse at 100, and pretty strong; pain in the head less than had been for a long time past; bowels somewhat distressed; M. M. small doses of the above mixture; occasional friction of the bowels with laudanum.

Nine o'clock P. M. Pain in the head considerable; pulse full and strong; skin dry, but a little more warm; no stool during the day; bowels easy; M. M. took away eight ounces of blood; edulcorated solution of acidulous tartrite of pot-ash.

Wednesday 2d, Morning. Head pretty easy; prostration of strength; pulse weak, and at 70; alvine evacuations natural.

From this time she continued to convalesce, having, however, an exacerbation of fever, and pain in the head in the afternoon of several of the following days. During this stage of recovery, she was treated with those medicines which tend to remove excitement to the surface; such as compound powder of ipecacuanha, alkalies dissolved in elixir of camphor, with fomentations of warm water. The head was kept bathed in cold water whenever pained. She is now able to walk about.

The foregoing case illustrates the important utility of blood-letting in many of those disorders where a cursory observation would deem it inadmissible. This is a case in which I am confident many practitioners would never have used the lancet. The preternatural coldness of the extremities and other parts, the low state of the pulse, and seeming paucity of the blood, would have deterred them from this efficacious evacuation. The fatal consequence which would have attended such a neglect is obvious. Indeed, I am persuaded, that many are annually lost by an inattention to this depleting remedy. If blood-letting is omitted in such diseases as yellow fever, phrenitis and pleurisy, it most certainly will be in those where it is less conspicuously indicated. Cases of these do actually occur. The physician who treated the yellow fever on Block-Island previous to my going there, had not, as I could learn, let blood in a single instance. The result of this was the loss of the greater part of his patients. A case of inflammation of the brain occurred in this vicinity about a year ago, which was permitted to proceed for ten days, without a single attempt to unload the sanguiferous vessels, and that contrary to the earnest solicitation of the patient's friends. A physician being called from an adjacent town, he immediately proceeded to open a vein, but too late; the struggles of life were rapidly closing, vascular energy had nearly ceased, and death soon relieved the sufferings of the unfortunate victim of medical error. A case of pleurisy occurred a few weeks past in a distant part

of this town. The patient was suffered to languish under the torturing malady, till the spirit forsook its shattered tabernacle, without even a solitary effort to save her by the presentaneous aid of venesection.

An ACCOUNT *of* DISEASES *as they appeared in several Parts of the District of Maine, from January*, 1803, *to January*, 1804: *Communicated in a Letter from Dr.* JEREMIAH BARKER *to Dr.* MITCHILL.

DURING the winter of 1802—3, the weather was unusually moderate. Several light snows fell, but they were frequently followed with rain.

In December Fahrenheit's thermometer ranged from 46 to 28 degrees, at 8 o'clock A. M. In January from 34 to 12 deg. In February from 43 to 14 deg.

The spring months were also very moderate.

In March the thermometer ranged from 46 to 27 deg. In April from 58 to 32 deg. In May from 68 to 36 deg.

The summer months were, for the most part, cool and very rainy, especially the two first.

In June the thermometer ranged from 78 to 60 deg. In July from 72 to 63 deg. In August from 74 to 66 deg.

In September the weather was dry and pleasant. In October and November it was, at times, rainy and foggy.

In September the thermometer ranged from 66 to 54 deg. In October from 63 to 40 deg. In November from 50 to 28 deg.

On the 18th of November a light snow fell upon the sea-coast; but at the distance of fifty miles from the sea it was said to be three feet in depth.

The month of December was pretty cold and snowy. The thermometer ranged from 40 to 17 deg.

In January and February the measles appeared in several families in some of our country towns, though mild; but no case of this distemper, to my knowledge, occurred afterwards.

During the spring, summer and fall months, the sea-port towns in Maine were unusually healthy, excepting a few sporadic cases of dysentery which occurred in the fall.

The scarlatina anginosa, however, prevailed in many of our inland towns, chiefly among children under puberty.

This distemper made its first appearance in the western part of the district early in the spring, at a considerable distance from the sea-coast, and traversed all the counties of Maine, as far as the river St. Croix; continuing its ravages till the close of the year, but with no great degree of mortality.

I attended only a few patients in this disease, which occurred in scattered instances near the coast. I have taken pains, however, to obtain accounts of its character and treatment from some physicians, who resided and practised in sickly towns.

In those cases which I attended, as well as in those which were related or communicated to me, the first complaints were loss of appetite and stomach-sickness; chilliness followed with more or less heat and pain in the head. Soon after, generally on the second day, a soreness of the throat, and difficulty of swallowing took place, with a redness of the fauces, and swelling of the tonsils. A hoarse cough sometimes occurred. On the second or third day, white sloughs appeared in the throat, and an eruption upon the skin, attended with a quick and full pulse, supervened. The inflammatory action of the vessels generally abated on the fifth or sixth day, but a febrile disturbance, with exacerbations and remissions, frequently molested the patient till the 12th or 14th. On the fifth or sixth day the sloughs were generally thrown off, leaving ulcerations, which discharged a corrosive ichor.

Under these circumstances the disease generally terminated favourably by the seasonable use of emetics, cathartics, alkalines, oils and epispastics. But when the fever was ardent in the first stage, with a tense pulse, the throat much inflamed, and the breathing difficult, blood-letting was called into aid, and found to be very beneficial. Calomel too was employed in such cases, with a view of inflaming the mouth, and producing a ptyalism; and when these effects took place, the inflammation in the throat evidently abated. Vesicating the external surface with cantharides, was also attended with happy effects, if seasonably done.

In cases of this description, when medical aid was not called in season, the fauces soon became gangrenous; the stomach oppressed, and the abdomen tense, with laborious braething and a cold sweat, presaging a speedy dissolution, which generally took place.

A physician, who had attended many patients in this disease, informed me, that in some cases the fever was highly

inflammatory, yet the throat was not affected; and that the matter thrown off, by emetics and cathartics, was often green.

I was also informed by another physician, that in two of his patients in this distemper, a violent *tenesmus* took place, together with an eruption around the *anus*, the verge of which was beset with sloughs and eroding ulcers. One of these patients died.

A few of the cases which fell under my notice will be related.

CASE I.

In the autumn I was called to a child, eighteen months old, in this disease. It had sores behind the ears when invaded. These sores readily became inflamed, and discharged a corrosive ichor for several days. The throat, in this case, was but slightly affected, and the febrile disturbance subsided on the fifth day, by the use of an emetic, alkaline salts, and castor oil. It soon recovered.

CASE II.

A girl, aged seven years, complained on the third day, when I was called, of sickness at the stomach, pain in the throat and head, difficulty of swallowing, and thirst; pulse quick and rather full; the tonsils were much swelled, the fauces very red and interspersed with sloughs.

The stomach and intestines were then evacuated, and olive oil, as well as alkaline salts, freely given. An epispastic was applied to the back of the neck, extending over the tonsils, and an oily poultice to the throat. Olive oil was used externally, as well as internally, and preferred on account of its known good effects in other cases of poison. The cantharides produced great inflammation upon the skin; the discharge was copious, and, in the progress of the disease, attended with a very troublesome itching. On the fourth day the inflammation in the throat was considerably abated, which, together with the fever, subsided on the eighth day.

CASE III.

A girl, aged four years, complained on the fifth day, when I first saw her, of great thirst, a hoarse cough, and the breathing was laborious. The eruption had disappeared, and the abdomen was tense. The fauces were gangrenous, the tongue dry and livid; pulse quick and weak. She died on the eighth day.

CASE IV.

A woman of a slender habit, aged thirty, was seized with this disease, though her throat was but slightly affected. The usual remedies were employed; but, on the fifth day, the eruption suddenly disappeared, when she became faint, and greatly oppressed at the stomach; pulse low, and feet cold. Bottles of hot water were then put to the feet; a large sinapism was applied to the region of the stomach, and snake-root tea liberally given with spirit. The efflorescence returned in half an hour, with a full pulse, and desquamation soon took place. She recovered.

CASE V.

A boy, fourteen years old, of a full habit, was seized with the usual symptoms of this disease. On the second day he took an ounce of salts; but, on the third, at ten o'clock A. M. when I was called, his fauces were highly inflamed, and of a livid hue; his breathing was very difficult, and he had a dry hoarse cough; pulse full and tense. I then drew a pint of blood, which alleviated his breathing, and the fauces assumed a florid red colour. Another dose of salts, with tart. emetic, was given, which operated cathartically. An epispastic was applied to the back of his neck, and two grains of calomel were given once an hour. At six o'clock P. M. the difficulty of breathing increased, and the fauces again acquired a livid hue. Another pint of blood was then drawn with similar good effects. Immediately after, the emetic was given, which produced six ejections and four dejections. A large sinapism was applied to the breast, which highly inflamed the skin. His complaints gradually subsided, and he had a favourable recovery.

I believe, with Dr. Darwin, that the "*deleterious material*" which produces Scarlatina, becomes mixed with the saliva in the mouth, and is carried into the stomach; and I presume that all the phenomena of this disease depend upon the primary action of that poison on this organ, excepting the inflammation of the tonsils, which may have arrested a part of the virus, because this disease has existed, and even proved fatal without any morbid affection of the throat.

In a fatal case of scarlatina, which I dissected in November, 1797, the throat was not affected; but the stomach was inflamed and disorganized. (Med. Repos. Hex. i. vol. ii.

p. 141.) Soon after I attended another patient in this disease, where the virus appeared, by the complaints, to be ravaging the stomach while the throat escaped. These complaints, however, were removed by an emetic of ipecacuanha, and a cathartic of castor oil, followed with an aqueous solution of alkaline salts, though not given till the fourth day. Hence I infer, that if the stomach could be duly evacuated and alkalized on the first day of the invasion of fever, before any considerable morbid associations should be formed, the febrile poison might generally be subdued, and the disease prevented. But this "*golden opportunity*" is seldom afforded to physicians!

"During the late American war, an emetic, says Dr. Rush,* seldom failed of preventing an attack of the hospital fever, when given in its forming stage." Why then may we not expect that equal success would attend the use of this remedy, in the forming stage of fevers of other denominations? Besides the scarlatina, a considerable number of cases of malignant fever, as well as dysentery, occurred in August and September, in some of our country towns.

Some of these patients resided on low ground, near swamps and fresh rivers, others on high land. In either situation, the disease was equally malignant, and, in some instances, proved fatal in one week from the attack. In the former cases the disease was believed to originate from noxious air; in the latter from improper food, in habits where the digestive powers had become weakened from excessive fatigue, and exposure to the inclemency of the weather.

About the middle of August, a young man, in an elevated situation, eight miles from the sea coast, was attacked with the usual symptoms of malignant fever, after much fatigue of body, and a free indulgence in fresh meat. He was bled on the second day, and purged freely with bilious pills. On the fifth a physician was called, and gave an emetic, which did not operate. He died on the sixth day, when his skin became purple.

About the last of August a middle aged man was attacked with a very similar fever, which so far subsided on the sixth day, that he was able to set up and take solid food; but the disease relapsed, and he died on the sixteenth day from the first attack.

Three of his watchers, and two visitors sickened with the

* Account of the yellow fever in 1793, p. 336.

fever, four days after their exposure to the noxious air of his sick room. These five I attended.

One of these patients, a middle aged woman, of a full habit, was violently seized with the usual symptoms of malignant fever. I was called on the second day, and arrived at noon, when a violent paroxysm of fever had just come on. She complained of great heat and anguish at the stomach, pain in the head and thirst, pulse quick and full. A pint of blood was then drawn, and four grains of tart. emet. with thirty of sal sodæ were given, which produced eight ejections. A cathartic of sal Glaub. with sal sodæ was also given, and cold water impregnated with soda freely taken, as also occasional doses of olive oil. An epispastic was applied to the neck. On the third day the febrile paroxysm was moderate; but on the fourth it was considerably violent, as also was the pain in the head. At this time another emetic was given, as also a cathartic which operated freely.

Fifth. Symptoms moderate.

Sixth. She complained of sickness at the stomach, hurried respiration, and increased pain in the head. A third emetic was then given upon the approach of the paroxysm, which proved moderate, and returned no more. She soon recovered.

The other four patients were less violently affected, and recovered in one week, with a more sparing use of evacuants.

About this time, a young woman in a country village was attacked with stomach-sickness, great oppression of the præcordia, pain in the chest, head, and back. On the second day her eyes and skin acquired a deep yellow hue; at this time I was called, when a pint of blood was drawn, which alleviated her pains. After this an alkaline emetic was given, which operated six times. This was followed with a cathartic of jalap and calomel; a large epispatic was applied to the region of the stomach, extending partly over the chest; soda was freely given, as also calomel in small and repeated doses. On the sixth day the fever subsided, and the yellowness disappeared. On the twelfth day she was able to walk out of doors; but on being exposed to damp air, her complaints returned, together with the yellowness. Similar means were used, and she recovered. No person contracted the disease.

In September, a middle aged man complained of loss of appetite, great pain in his head and back, chilliness, followed with heat and thirst. I was called the second day. His pulse

was quick, but not full. I gave four grains of tart. emet. with thirty of sal absynth. which, in half an hour, operated as a cathartic. I then gave as much more, with ℈i. of ipecacuanha. This produced one full ejection, and five very powerful dejections in quick succession, but his pains were not alleviated. About an hour after a profuse vomiting came on, and a large quantity of green and ropy matter was ejected. His pains were then wholly removed, and did not return. He was, however, thirsty and feverish, for which alkaline salts in cold water were freely given; as also occasional doses of castor oil. There was a moderate exacerbation of fever every day till the tenth, when his appetite returned, and he recovered.

This case served more fully to convince me that cathartic means, however powerful in their operation, cannot cleanse the stomach.

A woman, of a debilitated habit, aged fifty, complained of loss of appetite, and pain in the bowels. She took repeated doses of bilious pills, which operated very freely, and afforded some ease. But, on the fifth day, she was attacked with great heat and anguish at the stomach, oppression about the præcordia, pain in the head and thirst. I was called on the sixth day, when respiration was distressing, and she was in a cold sweat; pulse very weak and quick; hope of recovery almost vanished. I gave her two grains of tart. emet. with twenty of sal soda, which operated five times as an emetic, and ejected much dark green matter. Her complaints were then in great measure removed. After this tonic medicine and nutritious food were given. She had a favourable though slow recovery.

In this month, and in October, several cases of dysentery occurred in some of our sea-ports. I was called to a girl fourteen years old, who had voided bloody stools for six days, attended with much pain. Castor oil and paregoric elixir had been given by her nurse; but at this time her stools were black and very fetid. She was feverish and thirsty. I gave thirty grains of Ipecacuanha, with as many of soda, which operated several times, and ejected bottle-green matter. After this rhubarb, sal soda, and castor oil were occasionally given, as also lime-water. In two days her stools were of a natural colour, and free from fœtor. She soon recovered.

The first of October I attended a lady in violent dysentery of ten days duration, in which the skin and tunica con-

junctiva of the eyes were of a deep yellow hue, from the beginning to the termination of the disease. She recovered, and although her attendants were numerous, no person contracted the disease, neither was any suspicion entertained of its being imported.

In November and December general health prevailed upon the sea coast.

P. S. In perusing an account of the yellow fever, as it appeared in Philadelphia in 1803, (Med. Rep. Hex. ii. vol. i. p. 186), my attention was arrested by the following important and interesting observations of an eminent physician of that city, viz. "The STOMACH was, as usual, the devoted organ against which the enemy directed all his force. When the brain was affected, it appeared to be only through the medium of sympathy. Coma, delirium, and all other cephalic affections struck me as the offspring of a diseased stomach. Indeed, were we able to command to our satisfaction, the condition of this viscus, I believe we should seldom lose a patient in malignant fever."

That febrile poison produces inflammation in the stomach, similar to that which is induced by acrid poisons, as arsenic, &c. seems to have been clearly ascertained by dissectors and others. (See Rush's account of yellow fever in 1793, p. 120, and Med. Rep. Hex. i. vol. ii. p. 379, and vol. v. p. 300.)

When any of these poisons, excepting the febrile, have found admittance into the stomach, emetics and oils have always been resorted to, and considered as the most eligible means. Alkalines too have sometimes been subjoined.

It is well known that these means, when seasonably employed in such cases, have been productive of the happiest effects. It is true, that physicians are seldom called so soon to patients under the influence of febrile poison as when annoyed by other poisons, so that the stomach may sometimes be considerably inflamed or disorganized by the former before proper means are administered.

It has been a question among several physicians of my acquaintance, whether an emetic is warrantable in malignant fevers, when the stomach is considerably inflamed. But it is the opinion of some of my most experienced medical brethren, that an emetic may be given with impunity and advantage in this morbid condition of the stomach, unless organic lesion has taken place.

What particular symptoms will enable us to ascertain this

point I do not pretend to know; neither have I seen a description of them attempted by any medical writer. I am persuaded, however, that violent pain, together with burning heat and anguish in that viscus, do not evidence a lesion of organs; for these complaints have often been removed by an emetic, and the healthy action of the stomach has readily been restored, in cases where that organ has been thus tortured, not only by febrile, but by other poisons.

I believe that if the morbid condition of the stomach in malignant fevers was satisfactorily understood, and appropriate means could be seasonably and duly employed, these distempers would be much more successfully combated; and I sincerely wish that greater attention might be paid to this very important organ in fevers, by physicians in general, than to its sympathetic band of associated symptoms, which can receive but little benefit from the instruments of medicine, while an envenomed enemy has directed all its force against their devoted citadel, and prosecutes its ravages uncontrolled.

Some Account *of the* Diseases *which prevailed at* Waynesborough *(Georgia), and a few Observations on* Yellow Fever, *and the principal Remedies of* Fever: *Communicated by Dr.* Joshua E. White, *of Savannah, (Georgia).*

[Continued from p. 47.]

ON the origin of yellow fever, the faculty *have been* too much divided in opinion; but it is fortunate for our fellow citizens, that the advocates for its *importation* are daily losing ground, and that reiterated proofs confirm the home-bred production of it.* I say fortunate; for while

* Incalculable has been the mischief arising from the doctrine of *contagion* and *importation* as allied to yellow fever. The former is to be understood as implying the generation of poisonous matter by organic organs in a diseased state, as happens in the variolous disease, measles, varicella, vaccine disease, &c. and which will produce a like disease in others who may be exposed to its action: and if I rightly understand the latter, it dignifies the production of a disease by *fomites*, in a place remote from that where the noxious particles were engendered. It is not in place for me to examine more fully the grounds of the arguments made use of by gentlemen who say the yellow fever is *contagious*, and that it is exported and imported to and from various places. Some of the most minute and accurate observers of the operations of nature, as Hippocrates, the father of physic, his commentator Celsus, who flourished in the reign of Tiberius, and Aretæus, who lived in the time of Vespasian, make no mention of contagion in their works, and their authority is not to be contemned in despite of what more modern authors may have asserted in support of this absurd doctrine. To return; the contagionists should recollect there is nothing like a matter

they were persuaded, that it was *always* and *solely* an *imported* disease, they were unprepared to prevent the dire effects. Hence, those who have advocated its domestic origin, (in opposition to a very illiberal opinion which was long held forth) rendered a very essential benefit to the community; for it contributed to turn the attention of the people to the true source of the evil. The attempts of the importers of yellow fever are vain and futile; it is a doctrine erected on stubble; and the flimsy theory adds confirmation to the old remark, that there is nothing so *absurd* which *some* men will not *advocate*, and nothing so *true* which some will not deny.

We are ever prone to refer the source of general evils to other places. This spirit dates its origin as early as the time of our first parents. We *endeavour* to trace the yellow fever of our country to the West-Indies, and the inhabitants of those islands would willingly say it was brought from Siam.* It is not peculiar to the one nor the other of those places. It may be produced as certainly in the United States as in tropical countries, if the same cause exists, viz. the effluvium from filth or vegetable and animal matter in a state of putrefaction. This septic gas is the product of *all* countries and places where materials and solar heat are found for its formation. As only modified by climate, it was known to Hippocrates, who calls it *Febris Ardens*, or Causus.† Similar precautions would equally secure the United States, as countries within the tropics, from this scourge. In

sui generis, produced in yellow fever or plague, from *vascular* action, but that it is of *chemical* origin, the production of animal and vegetable matter, from the influence of solar heat. The various grades of fever, from the quotidian or tertian intermittent, to all the varieties of typhus, are caused by the miasma of putrid animal and vegetable matter, from the action of solar and animal heat, not *animal secretion*. These febrile diseases are the offspring of a *chemical* change in certain substances in a putrid state, producing what I would call miasmatic poisons; fundamentally differing from the production of animal poisons, as before defined. If this explanation and reasoning be admitted as correct, it will be easily seen that the seeds of yellow fever may be as well engendered on board a vessel abounding in filth, as in a crowded dirty city, house, or dry dock, as well in inland as commercial towns; and we may also conceive the origin and propagation of that error which has proved so fatal to the United States, but which I happily perceive is rapidly fleeing before the rays of truth.

* Whence it has been called *la maladie de Siam*.

† The similarity of the *Causus* and yellow fever will be discovered from what Hippocrates says in his description of the former. He observes, the tongue, "primum flava est, sed procedente tempore nigrescit. Si igitur per initia nigrescat, celeriores sunt liberationes, si vero postea, tardiores."

the latter, the mercury in a thermometer placed in the shade seldom exceeds 90 degrees of Fahrenheit. At Charleston, South-Carolina, and in Savannah, it has been known to rise in the shade to 101 degrees; and on the 13th and 14th of May of the present year, (1803), the mercury in my thermometer was at 94 degrees; the two successive days at 93 degrees. On the first and second of June it stood at 94 degrees, and on the day following at 95 degrees. With such intense warmth, is it a matter of wonder that the yellow fever should be engendered among us, while we continued unmindful of the great sources of the evil, so long and so justly feared? But it is consolatory to believe, and this belief is surely well founded, that an equal attention to cleanliness, in *every* respect, would equally secure the West-Indies and the United States from pestilential diseases. Depending upon the same fundamental and primary causes, they are to be prevented by the same means.

Let me repeat it; the great source of that pestilence, whose melancholy way has been marked by the most direful ravages at different times in Philadelphia, New-York, Boston, Norfolk, Charleston, and other large and smaller towns, has been in a want of attention to *cleanliness*. This is the evil which has produced such destructive effects; and to remove or prevent it, should be an object of the first importance with the police of our cities. By proper regulations, and by the appointment of proper officers, it is in their power to do much towards the preservation of general cleanliness. And when we reflect but for a moment on the physical and moral influence of this *half-virtue* (for I will so call it), must it not appear strange, that individuals and municipal bodies are so regardless of the various particulars which unite in producing it? No one can doubt the influence of cleanliness on health, nor, in a less degree, on the moral faculty. It is likewise, in an eminent degree, conducive to beauty. The injunctions of Mahomet on this subject are founded in true wisdom, and are rigidly adhered to by his followers. Our laws cannot be too coercive, nor too rigidly enforced to effect so desirable an object. This is the great desideratum. To preserve purity of the atmosphere, and consequent health, no filth should be suffered to collect, more particularly at that period when our summers become tropical. This is the hydra, the many-headed monster, whose poisonous breath spreads pestilence around.

The philanthropic labours of Doctors Rush, Mitchill, and others, eminent in the science of medicine, have contributed largely towards exploding the ill-founded and injurious idea of the yellow fever being an imported disease. That it may appear in a vessel from a foreign port (as has been again and again witnessed), I very readily admit, but I do aver it is in every such instance of *local origin*. On this subject I have already offered some explanation, and trust the reasoning which has been advanced will be substantiated by facts incontrovertible in their nature. The idea of *importation* was illusive, and the illusion has unfortunately continued too long, nor has it yet lost all its supporters. Interest, which too frequently is the primum mobile of men's actions and opinions, too long upheld this dangerous one. Reiterated facts have proved its fallacy, and we have been led to seek for the causes where alone they may be found. This is in every dirty street, lane, and alley, on filthy wharves, and in dry docks; in the holds of ships, in cellars where putrescent substances are lodged, and in all those houses whose inhabitants prefer filth to cleanliness. For obvious reasons, they are mostly met with in cities and crowded places; but towns and villages, remote from the busy scenes of commerce, are, unfortunately, not always exempt.

The records of history furnish ample proofs of the deleterious influence of marsh exhalations, and the ill effects of animal and vegetable matter when it has undergone a certain chemical decomposition.

From whence arose the plague of Athens, but from the manners, habits, and mode of living of the inhabitants, in small confined houses, or rather huts; from an immense population in a small compass; from a deficient supply of vegetables (their accustomed diet); from a large portion of the bodies of the dead remaining unburied, and thus still more tainting the air, already rendered deleterious; from all those causes being powerfully aided by various circumstances operating on the minds of the distressed Athenians?* Has not Europe been less infested with pestilence for the last century and an half, than in the ages of Gothic barbarism; since the police of cities has made the various means of preserving cleanliness an object of primary importance; since the great improvements in building, in widen-

* Smith's History of the Plague of Athens. Med. Rep. vol. i.

ing streets, and in the general plan of cities? This applies with most force to London, where the people are most afflicted with febrile diseases in low, dirty, and narrow streets. Yet, with a less crowded population, we have witnessed similar effects in the narrow and filthy streets of Philadelphia, New-York, and other American cities.

The Medical Repository contains sufficient proofs of the *home-bred* origin of a poisonous septic gas, capable of exciting fevers of every form, from the mild intermittent to the highest grade of the typhus gravior. I beg leave to extract a few of the facts which are interspersed throughout the valuable pages of that work, in confirmation of what has been already said, and under a belief that it will aid in dispelling the scepticism which still darkens the minds of some of my countrymen on this interesting topic.

A quantity of fish offal produced a pestilential fever in Newbury-Port, State of Massachusetts, in 1796.*

The draining a pond in the town of Bethlehem, Connecticut, in 1750, produced what was then called a plague. The swamp was again overflowed, and the water being once more drawn off in 1760, produced "another wasting sickness." Some of the sick died, in twenty-four hours.†

Dr. De Rosset, in the second volume of the Medical Repository,‡ alledges, that a fever, which carried off more than one hundred inhabitants in Wilmington, North-Carolina, originated from marsh miasmata, aided by the previous state of the weather.

A pestilential disorder which affected two hundred and forty-six persons in the before healthy town of New-London, in the summer and autumn of 1798, was proved clearly to have originated from a large quantity of putrid fish in several stores near to each other.‖

The yellow fever was evidently produced in 1793 in Philadelphia, from the exhalation from putrid coffee;§ and in the same place, in 1797, from the septic air issuing from the holds of two vessels.¶

* Dr. Coffin's Communication. Medical Repository, vol. i. p. 504.
† Letter from the Rev. Azel Backus, vol. i. p. 523.
‡ Page 152.
‖ Medical Repository, vol. ii. page 402.
§ Rush's Works, vol. iii.
¶ Medical Repository, vol. ii. page 354.

The town of Boston suffered severely in the summer and autumn of 1798 from the putrid effluvia issuing from an immense quantity of putrescent hides, and from stinking beef and fish.*

Doctor Lee's account of the yellow fever at Port Elizabeth, in New-Jersey, proves it to have been there of domestic origin.†

What produced the yellow fever at Galliopolis, on the Ohio, in the year 1796; at the village of New-Design, near the Mississippi, in 1797; and in Nittanny and Bald-Eagle Valleys (Pennsylvania), two hundred miles from Philadelphia in 1799, but septic exhalations from vegetable and animal matter and from water in a state of putrefaction?‡ In these places importation was never thought of. They are too far removed from the shores of the Atlantic to give the smallest shade of plausibility to such a supposition. The same, or similar causes, which produced so destructive a malady in the above places, have operated from time to time, but with greater force, to produce the yellow fever in our commercial towns.‖

In the preceding detail of observations and recital of facts, I have been more diffuse than I at first expected. It is unnecessary to multiply the latter, for from their frequent occurrence, this might be done almost *ad infinitum*. I trust the few I have adduced will be thought of some importance when it is observed, their tendency is to corroborate an opinion which has been advocated by many of the most enlightened characters; and to aid in the subversion of the absurd dogmatism of those, who, in contravention of the plainest facts, maintain the importation of the yellow fever. The establishment of the opinion that it is of domestic origin, embraces the dearest interests of our country, and is intimately connected with the health and lives of countless numbers. Under this conviction, those preventative measures will be adopted which will be most likely to insure

* Medical Repository, vol. ii. page 390.

† Ibid. vol. ii. page 246.

‡ Ibid. vol. iv. page 74 and 75.

‖ If (as the late Doctor Smith said) local causes originated a pestilence in Athens, local causes may generate a yellow fever in Philadelphia and New-York; and if in these places, why not in the most interior part of our country under like circumstances, and under the influence of similar fortuitous agents?

success; but while the contrary opinion gains general credence, little or no attention will be bestowed on the prevention and removal of those causes which *are the real* sources of the dreaded evil.

The cases I have related will somewhat elucidate the general form of the disease which prevailed in and near Waynesborough last fall, and the mode of cure which I adopted. Their analogy to the highly inflammatory fever* which has almost annually ravaged our cities, will be evident to the most superficial observer. Slight variations in the diseases of different places, either in the force of morbid action, or a peculiarity in *certain* symptoms, may occur from difference in habits or constitutions, more or less violence in the exciting or predisposing causes, or the existence of certain local circumstances; but these do not change the genuine and specific form of the disease. It is a melancholy fact that cases similar to those I have recited, are not rare occurrences: more or fewer are to be met with every year; so true it is, we have been inattentive to the inductions we should have drawn from plain and reiterated facts. Receiving as infallible and indisputable truths the dogmas of schools, we have cramped the operations of our minds; and, as if we were treading on hallowed ground, have too seldom dared to deviate from the nice-drawn distinctions of nosological writers. While, on the one hand, we should carefully guard against innovations until experience has established their propriety, we should not on the other *blindly* and *servilely* follow the footsteps of our ancestors, but, *on some occasions* at least, permit our intellectual faculties to expand and operate. In other words, we should sometimes think and act for ourselves.

As proposed, I proceed to make a few remarks on some of the principal remedies of fever, including under this head most of the genera of Doctor Cullen's order of "Febres," as being only different *states* of one and the same disease. Like this itself, the remedies are plain and simple; they are few in number, for diseases are not to be cured by a multiplicity of remedies and prescriptions, nor by heterogeneous and unmeaning compositions. Acute diseases, like the endemial causus, in general soon run their course, and

* Various names have been given to one and the same disease. I would prefer the "Endemial Causus" of Doctor Mosely.

their fatal termination is only to be prevented by a timely and judicious use of those powerful remedies which are particularly adapted to their removal.

First. *Bleeding.* Those who have adopted Doctor Rush's theory of the proximate cause of fever, and have assented to the truth of the observations in his learned "Defence of Blood-letting," will not need additional remarks or facts to add conviction to their belief; while to those who still oppose the fundamental principles of his system, I fear my weak efforts in the subsequent observations may appear vain and nugatory. The task is difficult, but not unpleasant.

Bleeding is to be considered a catholicon in all fevers, except in those where, from the sudden or gradual abstraction of accustomed stimuli, direct debility supervenes.

Bred in the school of the illustrious Cullen, I was an admirer of his theory, and believed it to be correct. Subsequent experience has convinced me that, though ingenious, there are errors interwoven in it, which lead to many and improper deductions. I also early imbibed the too common prejudice against bleeding in warm climates.

Among the ancients, Galen and Aretæus used the lancet in warm countries; and among the moderns we find the names of Sydenham, Hillary, Mosely, Cleghorn, Desportes, and others equally respectable, who practised bleeding in the diseases of tropical climates and hot seasons.* Doctor Rush has well observed, "the relaxation and debility of the body in warm weather, and in hot climates, has not been understood until lately to be of the indirect kind. Of course, instead of forbidding, it requires depletion to remove it. It is lessened at all times by abstemious living, and by gentle doses of physic; but when the stimulus of a fever is added to that of the heat of the sun, blood-letting is often more necessary to remove it than it is in cool weather, or in temperate climates." If we admit the position as just, that all fevers have but one proximate cause, and that this consists in "an irregular action or convulsion in the blood-

* A work which is perhaps less known and less read than it is entitled to be, deserves to be mentioned here. It is styled "Empirical Observations on the Use of Bleeding, in the Island of Jamaica; from which is pointed out, the necessity for a liberal use of that remedy in the acute diseases thereof. By George Spence." Amidst much abstract matter, may be found many useful remarks on the advantages to be derived from blood-letting, and the confidence which may be placed in certain appearances of the blood.

vessels;" if we also admit that stimulus (however varied) is the remote cause of every fever, we shall assent to the truth of the above quotation. From the nature of the remote and proximate causes, we must naturally expect an increased impetus of the circulation (hence the fatal effects of fever); and when we are convinced that the stimulus of fever is increased by the heat of the sun, we shall admit the propriety of bleeding in warm climates and hot seasons. I have had this satisfactorily confirmed in my own practice. Where the causes of fever have not been such as to produce direct debility, I consider it as dangerous to dispense with the use of the lancet. Bleeding, as already observed, is not a new practice in warm climates;* and I claim no merit but in adopting this practice more freely than I believe has been usual in this State. To the enlightened Rush belongs the credit of giving to this divine remedy its deserved celebrity, and I here with grateful pleasure acknowledge the benefit which I have received from his luminous observations on bleeding. It is a credit justly attached to him, and for which, added to his other scientific and philanthropic labours, he merits a civic meed. But how shameful, how melancholy, and discouraging the fact! like most others who have benefited mankind by their labour or genius, he has roused the malicious spirit of envy; but by the force of his reasoning, substantiated by the validity of innumerable facts, he has thrown a deep shade over it. To use the words of a poet:

> "Envy will merit as its shade pursue,
> "But like a shadow proves the substance true."

As the effulgence of the mid-day sun produces blindness when acting upon the organs of vision, so the emanations from his illumined mind have confounded his adversaries. The justness of his doctrine is not to be measured by the

* In the work last quoted we have strong reasoning, and plain deductions from facts, warranting the free use of the lancet in the West-Indies. To these we have added the respectable names of Doctors Broadbelt and Weston, who have both used it with success in the island of Jamaica. It is useless to multiply authorities on this head. The plain evidence of daily facts, independent of a theory erected on the most correct pathological principles, I would hope to be sufficient to overcome common prejudices, and give stability to so rational a practice.

tinsel glitter of language, or the plausibility of a fine-wove theory. It is founded upon certain fixed principles or laws of the animal economy, and it has been supported by the unrivalled success of his practice in the yellow fever of 1793, and subsequent years. It has, moreover, been confirmed by the testimony of all those who have relinquished old prejudices and adopted a similar one.

With abilities so incompetent to the task, it were presumption in me to attempt an explanation of the various states of the human frame indicating the lancet, or to lay down certain rules which might be accepted as boundaries for its use.

Venesection is indicated by different and *apparently* opposite states of the system. A full pulse does not always direct to the use of the lancet, neither does the delicacy of constitution forbid it in the inflammatory stage of fever. These facts have been illustrated by two of the cases I have related. The small and frequent, the slow and intermitting, or the slow and regular, equally with the tense pulse, sometimes point out the necessity of phlebotomy. A pulse which has been called oppressed or hobbling, often calls in the most urgent language for the lancet.* Mr. Bromfield observes, "that a sanguine plethora may be known by the pulse. An artery overcharged with blood is as incapable of producing a strong full pulse, as one that contains a deficient quantity: in both cases there will be a low and weak pulse." It may be taken as a further proof, that bleeding is indispensably necessary in warm climates, from the sorrowful fact that emigrants from Europe and the northern States are always the greatest sufferers in our sickly seasons, and in tropical countries. It is observed by Doctor Moseley, that "people from colder climates, North-Americans and Europeans, on their arrival in the West-Indies, are subject to what is called a seasoning. This seasoning is understood to

* On the indications for bleeding to be taken from the state of the pulse, every person would do well to consult the observations of Doctor Rush on this particular subject. I cannot but observe, however, the great difficulty which is sometimes met with in ascertaining *precisely the state of the system* from the pulse *alone*. Variations in it are so easily produced from such a variety of circumstances, both in the states of sickness and health, and diseases are sometimes so masked, as to perplex even the experienced physician, and render the indication difficult. Frequent and accurate observations will best enable us to form a correct judgment on this very important branch of pathology.

be the first illness they are attacked with; which, unless they live very temperately, or are in a proper habit of body, though some people are unmolested for many months, seldom suffers them to remain long, before it makes its appearance in some mode or other."

Since my residence in this State I have in various instances observed that new-comers are most liable to be attacked with the endemial disease of the warm months, and that, in general, it discovers much more violent symptoms of excessive inflammatory action, than in those who have resided one or more summers; consequently requiring more speedy attention.* If not cured by the most timely remedies, it sooner runs its course to a fatal termination. Nothing is more usual than for a person newly arrived, upon the first approach of summer heat, to complain of head-ach, giddiness, general weakness, heaviness, loss of appetite, and very often a fulness of the blood-vessels. I have heard some complain of their fingers as if they would burst. At the first approach of these symptoms, I have known a spare diet, with the aid of cooling laxatives, as cream of tartar or salts, at the same time carefully avoiding the solar heat, check their progress, and restore health. I have frequently prevented an impending attack by a timely bleeding. † The system in a gradual manner becomes habituated to the climate; the above symptoms are commonly less severe, and the danger of an attack is diminished after the first summer. This does not militate against the practice of bleeding, should persons be attacked with the usual symptoms, even after a residence of several summers; nor in those who are born and bred in hot climates. The stimulus of heat may be considered as one of the general remote causes of fever, and as always co-operating with the remote causes to produce violent disease. Nor does the power of habit in many instances overcome this tendency of solar heat (when aided by exciting causes) to produce violent commotion in the sanguiferous system, and consequent disorganization of the solids. Rupture of, and congestion in the blood-vessels of the brain, lungs, liver, &c. are too often the fatal termina-

* All seasoning diseases are of the inflammatory kind, and yield to antiphlogistic treatment proportioned to their violence. *Moseley.*

† Doctor Moseley advises persons newly arrived in the West-Indies, who have the harbingers of yellow fever, to be immediately blooded, take a dose of salts, dilute plentifully, and to keep themselves quiet and cool. See his work on Tropical Diseases, &c. page 428.

tions of our summer diseases, and point out the necessity of early and copious bleeding.* We thus stifle the fever in embryo, and prevent those fatal effects which give rise to the gangrenous *state* of fever.

Were I even competent, it is not my intention to note the different morbid states of the system (as evidenced by the pulse and other symptoms) which direct to the use of the lancet; nor to mention the varieties in the appearance of the blood drawn.† From the writings of Doctors Rush and Moseley more ample information may be obtained on those important heads. While in the common fevers of this climate it is not so often necessary to bleed as copiously as directed by the latter in the Endemial Causus of the West-Indies, I can safely aver that the advantages of bleeding over every other mode of cure have not been sufficiently appreciated. In my practice I have almost made it a general rule to bleed in every exacerbation, or rather while the symptoms which first indicated it continued. In the good effects to be derived from bleeding we are often frustrated from taking it in *too* small quantities. This has been a source of serious evil, and has brought a partial discredit on the remedy. In using the lancet, the *state* of the system, not the *name* of the disease, should be our guide for its continuance or repetition; and the immediate effects upon the pulse, countenance, &c. should direct us to the quantity to be taken at a time. Except in fevers of that high malignant type which threaten speedy dissolution, it is better, *generally* to begin by taking a small quantity; more espe-

* The intention of bleeding can be answered only by performing it immediately, and in the most extensive manner; which the high state of inflammation, and the rapid progress of the disease demand. *Moseley.*

† The prognostic and the indication from the appearance of the blood is still doubtful and involved in much obscurity. Certain states of it have long been regarded as denoting peculiar force of arterial action. Huxham placed much confidence in it, and has written two chapters to define those appearances, and the state of the system by which they are produced. In judging of the nature of diseases he thought it indispensable to examine the blood before an opinion was formed of their nature. Sir John Pringle also, besides his testimony for the speedy and free use of the lancet in acute diseases, has left us his opinion of the confidence to be placed in the appearance of the blood. But it has been reserved for a later period to know, that various other morbid states of the blood beside that of a size, are to be regarded as denoting excessive arterial action. To this discovery we are indebted to Doctor Rush; and to his excellent remarks on this head I must beg leave to refer.

cially where there is great indirect debility, with a depressed pulse. Doctor Rush has very fully evinced the advantages of copious bleeding, and the fallacy of that mode of practice which attempts to cure inflammatory diseases by spare or moderate bleeding. The facts he has stated, independent of his cogent reasoning, should force conviction on the mind. In violent inflammatory cases the loss of a few ounces can have but little effect in overcoming morbid action: this quantity can never relieve;—hence the observation of Botallus, "*num huic satis fuerit missio sanguinis unciarum decem aut duodecim? non certe, sed librarum vel duarum vel etiam trium.*" The quantity of blood to be taken must always be proportioned to the violence of the symptoms,—*these are to be our guide*, and where they do not abate after several bleedings, it will often be necessary to bleed *usque ad animi deliquium*. In thus persevering in the use of the lancet we do no more than imitate the practice which is common with other remedies.

Second. *Purging*, as a depleting remedy, merits high confidence. Its great success in the yellow fever of 1793, and some subsequent periods, has established its usefulness. Doctor Mitchell made free use of it in the same disease when it prevailed in Virginia in 1741. As allied to these epidemics, it becomes an indispensable remedy in the fevers of this State. I have often nipped them in the bud by a purge. They produce their good effects by unloading the abdominal viscera, emptying the intestinal canal of fœtid or offensive matter, and sometimes perhaps, by exciting a counter-morbid action. By lessening the quantity of chyle to be carried to the thoracic duct, they thus diminish the quantum of blood in the system. In the diseases of hot seasons the abdominal viscera, and particularly the liver,* are more peculiarly sufferers; but by timely purging the emunctories are opened, and fatal congestions and effusions thus prevented. It is often impracticable to excite a salutary perspiration where the first passages are loaded with offensive matter; but as soon as the colluvies is discharged, the excretory vessels of the surface are relieved of the load and sti-

* The bile is almost universally censured as the immediate cause of our febrile diseases. Its increased and vitiated secretion no doubt aggravates certain symptoms; but the former is not the primary cause of disease, and it is to be considered as the mere effect of morbid action in the secretory vessels of the liver.

mulus which oppressed them, and they discharge their contents freely. That purgatives sometimes cure, or at least aid in curing diseases, by exciting a different or opposite action in the system, no one will doubt who has witnessed the good effects of salivation in fevers, tetanus, and consumptions. The second has also been cured by producing a strangury and dysentery.* One disease is often cured by the production of another, and where we can divert the force of diseased action from a vital part, we are rendering our patients an essential service, and advancing far towards the cure. This is a very important branch in curative indications, and opens an extensive field for medical research.† But it is not thus that purges generally operate in the cure of fevers. They belong to the class of depleting remedies, and they act in a peculiar manner on the biliary vessels. In the hot months the bile is most commonly increased in quantity, and vitiated in quality. As has been before remarked, this is the *effect*, not the *cause* of diseased action, yet the discharge of it scarcely ever fails to lessen the danger, and produce a favourable crisis, provided the morbid action in the liver has not produced a disorganization of the viscus. It will be understood that I do not mean that purgatives should ever supercede the use of the lancet where this is indicated. Like vomiting and other febrile remedies, they are uncertain in their operation, and more tardy in producing the desired effect. As an auxiliary to venesection, they are entitled to much confidence.

The choice of purgatives is not a matter of so much importance as has been imagined. Different ones agree best with different constitutions. So we effect our object, it matters little whether it be calomel, jalap, gamboge, sulphate of soda, castor oil, or any of the others which too much swell the materia medica. As in the exhibition of all remedies, it is best to give them in as simple a form as possible; for

* See the case of tetanus communicated by Doctor Brown in the Medical Repository, vol. iv. page 337.

† Doctor Ferriar, in his very valuable tract on the "Conversion of Diseases," thus speaks: "As it appears that many conversions are processes, instituted by nature for the cure of diseases, and that some of the most active remedies operate in a similar manner, we may not only improve the history of diseases, but the practice of medicine, by paying closer attention to the connection and operation of disorders on each other. With this view of the subject, the most complicated cases will admit an instructive developement, and every additional fact may find an useful place.

thus we have an opportunity of alternating them more frequently, and hence we see the absurdity of the heterogeneous compounds in some of our pharmacopeias. In general I have found calomel, with a few grains of gamboge, jalap, aloes, or scammony, one of the best purges. These last may be omitted where they excite nausea and vomiting. I prefer the mercurial purging powder, consisting of equal parts of calomel and jalap, in the first stage of fever. It most effectually emulges the biliary ducts, and frequently relieves the vomiting, so often distressing in the commencement of fever. The idiosyncracy of some habits sometimes forbids certain purgatives, and the judgment of every practitioner, with the state of the system, should direct him to a choice. An extract from the roots of the May-Apple (podophyllum peltatum) is a common and useful cathartic among the country people.

(To be continued.)

A DESCRIPTION *of the City of* TRIPOLI, *in Barbary; with Observations on the local Origin and Contagiousness of the* PLAGUE: *Communicated in a Letter from* JONATHAN COWDERY, *Surgeon of the late Frigate Philadelphia, to Dr.* MITCHILL, *dated Malta, July* 10, 1805.

I THIS day received your consoling letter of April the 18th, and also several papers and pamphlets, for which I beg you will accept my sincere thanks. My sympathy and esteem for the people of my country were highly excited on finding in your letter, that all classes of people in our country commiserate the misfortune of our falling into the hands of barbarians, and that Congress have adopted measures for our emancipation. Thanks be to the activity of our navy, and the efforts of General Eaton and his few but valiant men; who much astonished every Mussulman in Tripoli, and put the whole Regency on the point of a revolution. We were liberated on the 3d of June, for sixty thousand dollars, as a balance of prisoners. We left about two hundred slaves, who were subjects to the king of Naples; they much regretted that they were not subjects of such a happy country as we were, whose sovereignty had the spirit to deliver their subjects from slavery and misery. I have since visited the once

opulent and powerful, but now wretched Syracuse. We arrived here yesterday, and find the people of Malta very civil, polite, and commercial, and the immense fortifications are filled with British troops.

You request me to collect all the information I can respecting the plague in Barbary. A case of this, Sir, has not occurred to me since my acquaintance in this country. I will, however, according to the best of my knowledge, give you a description of Tripoli, and other circumstances; which I presume will explain to you why Tripoli has in former years been infested with the plague, and is now remarkably healthy. The city of Tripoli stands on the north coast of Africa, north latitude 32° 54′, and longitude east from London 13° 11′; is built upon the ruins of ancient Oca, and a sandy soil. It contains about 40,000 Turks, 5,000 Jews, and 1,000 Roman Catholics and Greeks. It has eight mosques and one christian church. Some of the mosques are very large. Here are also several baths, which are places of considerable resort on account of the dictates of Mahomet, which direct the keeping the body clean. I have seen many deviate from this, and rub their bodies with dry sand instead of water. This custom, I am informed, originated from pilgrims and travellers who were not able to find water while travelling over the desert. The Bedoweens, a kind of sojourning Arabs, and people from the interior of Africa, often prefer this imperfect method of purification, even when water is at hand. Many of the buildings have the appearance of great antiquity, of which the Turks can give no account. Among them is a Roman palace and a triumphal arch.

The castle stands on the water's edge at the north-eastern-most corner of the city; its ramparts are of different heights. On the land side they are from forty to eighty, and on the water side they are from thirty-five to forty feet in height. Twenty-five pieces of brass ordnance, of different sizes, are mounted on different parts of the castle, to command the city, adjoining country, and harbour. Several of the apartments in the west end of the castle are large, commodious and airy, ornamented with a variety of fine marble, mosaic and stoco work, and richly furnished in the Turkish style. Here the Bashaw receives and holds audience with foreign Ambassadors and Consuls; holds his Divan, which he often imperiously over-rules, and gives his mandates, which are often

crowned with the most cruel torture and death. Here are a great number of smaller apartments; a large open court and spacious gallery for the accommodation and residence of the Bashaw, his wives, children, and attendants; here is also a bomb-proof room, to which the Bashaw flies in times of danger. The apartments in the east end of the castle are stables for the Bashaw's horses, and prisons where our officers and myself were confined, and where the Bashaw confines his hostages and criminals, and in the midst of which is the magazine of gun-powder. These gloomy mansions of horror are in bad repair, full of vermine, and is the filthiest place in all Tripoli. I was taken out of this prison some months before our liberation, and put on a very limited parole, to attend the sick and lame of our crew. The city, including the castle, is three and an half miles in circumference. The country about Tripoli, nearly to the foot of Mount Atlas, which is two days' journey from Tripoli, is all, except the gardens and orchards near the city, a sandy and barren desert. The city, and the ramparts and batteries which surround it, are built of the ruins of the ancient cities of Oca, Leptis, and Sabrata, which are chiefly marble, and a variety of other calcareous stones, and columns of granite, many of which are very large, put together with a cement of lime and sand, but without the regularity of square, plumb-line, or level; the walls are generally white-washed with new-slacked lime at the commencement of the Ramadan or Carnival. The tops of the houses are flat and covered with a composition chiefly of lime, which, when dry, forms a very firm terrace. To ward against the vengeance of their enemies, the whole city is in a state of fire-proof. The fresh water used in Tripoli (except in time of scarcity, or the fear of a siege, when it is brought from the wells in the desert on mules, asses, and christian slaves) is rain-water caught in winter, the only time of rain in this country; it runs from the terraces through well-constructed earthen tubes into large vaulted reservoirs, which are built of stone and lime, and well coated with lime, and are in the earth below the influence of the sun, where it is preserved from filth, and when drawn for use, it is remarkably clear, cool, and pleasant. The wells in and about Tripoli for about two miles from the sea-shore, produce brackish water, which is used for scrubbing and drenching the sinks, necessaries, sewers, &c. and for watering the gardens and orchards during the dry season.

Sinks lead from the houses through the bottoms of the necessaries into very large common sewers, which lead into the sea, all of which are built of stone and lime. The seamen and mariners of the late frigate Philadelphia can attest the vast quantity of lime used in Tripoli; a number of whom were driven by unfeeling barbarians to work in it for nineteen months. The streets not being paved, are naturally very dusty; but every thing of the nature of manure is diligently sought for, gathered into large baskets, slung upon camels, mules, and asses, and carried to the gardens and orchards, to raise the soil from its natural state of barrenness. These little plantations are each enclosed with high walls; they contain from two to six acres each; several of them are cultivated by European gardeners, and are made to produce all the useful roots, plants, and fruits that are natural to the torrid and temperate zones. These enclosures are about two thousand in number, all interspersed with tall date trees, and are laid out in such a manner that collectively they form a semicircle, which extends from shore to shore, at a little distance from the city. This evergreen half-zone, the sandy desert which it lies upon, and the proud Atlas which borders the prospect when viewed from the top of the castle-gate of the city, or the shipping on the coast, presents a beautiful prospect. The winds from the north, north-east, and north-west, are generally very salubrious; those from the south, south-west, and south-east, come over the parched continent, and are generally very oppressive; they are called the Sirocco, and sometimes rise to that degree of heat and violence, that those who are not able to find shelter in houses, tents, &c. often perish; it sometimes lasts three days, but generally not longer than the first twelve of the twenty-four hours. The want of proper apparatus rendered me unable to learn the different degrees of the temperature of the climate. The nights and mornings are sometimes cool after rain, but I never, while in Tripoli, saw any frost or snow. The principal market is held every Tuesday, on the sandy beach, about one mile easterly of the city, where a variety of articles are sold, and the butchers kill and sell their meat, chiefly to Christians, Jews, and the higher order of Turks. A very little meat is killed in the city. The common class of people, and the Bashaw's troops and seamen, eat but little meat; their diet is chiefly dates, olives, oil of olives, bread, and a variety of vegetables, which they cook in oil. The Turks

are, with a few exceptions, strangers to luxury and dissipation. The most prevailing disorders I ever discovered among the natives of Tripoli, were ophthalmia in summer, and catarrh, and slight pneumonic affections in winter. The former I attributed to a remarkably serene and brilliant sky and the scorching winds from the continent. The latter I attribute to the want or neglect of proper clothing. The dead, all except those of the Bashaw's family, and a high order of Marabuts, or Priests, are buried out of the city. The Bashaw informed me, that in the reign of his father a great sickness came among them, which destroyed many thousands of their people. He said that he did not know the cause of it. On a further inquiry among the oldest of the Divan, I understood, that at the time of the plague, a large foss, or ditch, was dug at the foot of the outside of the south and east ramparts of the city, which, in the rainy season, was filled with water, and was intended to prevent the enemy's scaling the walls; they said that the water in this ditch produced a very offensive smell, during the hot season, and that the Bedoweens, who encamped on the borders of it, were the first sufferers; that they mostly perished, and were buried in heaps in the encampment. They informed me, that the rains in winter, and the winds in summer, had filled the ditch with sand, since which they had enjoyed health, but did not know the cause of it, unless it was the blessing of God and Mahomet. Their fear of the Americans scaling their walls induced them lately to open a part of this ditch, which was full of rain-water when we left Tripoli. If it is not soon removed, we may hear of its pernicious effects. On the beach, one cable length east of the castle, and half a cable length above high water mark, myself, with our boatswain and twelve of our crew, did last summer, through the desire of Capt. Bainbridge, and permission of the Bashaw, bury our brave officers and seamen who were killed in the explosions and in the engagements off Tripoli, and who floated on shore. In digging the graves our men hove up vast quantities of human bones. The Turks informed me that they were bones of the people who died with the plague many years ago; they collected them into baskets, and carried them away as fast as possible, muttering and saying, that they should not be polluted with Christian bones. Hamet Reis, the minister of marine, once informed me, that vessels from their port to Christian ports

were quarantined, for fear of the plague; they did not, therefore, think it necessary to quarantine vessels from other ports to theirs, because, said he, we think that as they are fearful of our affecting them with sickness, there is no danger of their affecting us.

I need not comment on the cause of the plague, which the people of Tripoli experienced in former days. It appears evident that it was the offspring of the noxious exhalations from the filthy water in the neighbourhood of Tripoli: its deleterious effects must have been dreadful, while under the influence of the scorching sunbeams of Africa, and amidst an indolent people. It seems by the story of the natives, that kind nature did with her tempests fill up this nest of pestilence with the sand of the desert, and thereby destroyed the *parent* of *disease*, who had wielded her destroying hand among the wretches of Tripoli. The calcareous substances of which Tripoli is chiefly built, the well-constructed drains, the killing the meat, and burying the dead at a distance from the city, the removing the offals and filth to the gardens for manure, and the temperate manner in which the Turks and Arabs live, have without doubt been the cause of the late remarkable health in Tripoli.

I forgot to mention that the sand about Tripoli is a mixture of several kinds of earth; the most predominant is of a calcareous and silicious nature.

About four miles from the city, is a quarry of lime-stone; it is below the level of the desert, and is much worked.

Observations *on the* Union *of* Arteries, *and the* Treatment *of* Aneurisms: *Communicated in a Letter from* Thomas Ewell, M. D. *of Virginia, to Dr.* Miller.

ALTHOUGH a noted book-maker declares in most of his prefaces, that reputation is the object of his labours, I hope you will believe that such a bubble has had no influence with me on the present occasion. The prospect of extending one's usefulness appears a much more powerful inducement to labour, than the reflection that more will be known of us than that we "lived and died." Under this impression I have hastened to offer for your consideration the following remarks.

Notwithstanding the glaring folly of those who pretend to practise without theory, there are many declaring that theories are of no consequence. A practitioner who had his full portion of public confidence, once told me, that the futility of theories was shown by the fact, that the treatment of most fevers in all ages had been the same, although the theories differed very widely. It is true that in a few instances this was the case. But it would not be difficult to show that the practice has varied more than the theories, and that the best practice has proceeded from the application of the best principles. The hypocrisy of those who pretend to deny the connection between theory and practice may be seen in an account of the theories and treatment of hemorrhages, which have been communicated to the world.

After the dawn of scientific surgery in France, we find an eminent French surgeon, M. Petit, ascribing the cessation of hemorrhages to the coagulation of blood in the vessels. His hypothesis owed its origin principally to the discovery of a coagulum in the femoral artery of a stump after death. This erroneous doctrine produced its bad effects. It led M. Petit and his followers not only to an unpardonable neglect of the needle and ligature, but to improper practices. They were so much influenced by the idea of the coagulation of the blood, that they would prescribe such medicines as they termed absorbents, to abstract its more fluid parts from the coagulum. To this theory of the coagulation of the blood, Mr. Marand added, that there was a partial contraction of the artery, which, however, it must be observed, led to no material alteration in practice. But a surgeon equally eminent advanced a different doctrine, which produced a change in practice. This was Mr. Pouteau, who attributed the cessation of hemorrhages to the effusion of blood in the cellular membrane surrounding the part which compressed the sides of the artery. This idea led surgeons to a more free use of the needle, and to include large quantities of flesh in the ligature. Mr. Pouteau makes the following observations: "Mais s'il est une fois avéré que le gonflement des parties au dessous de la ligature fait le principal obstacle a l'eruption du sang arterial, il sera naturel de conclure que le plus ce gonflement sera considerable, le plus il opposera de resistance a l'impetuositè du sang arterial." This theory was succeeded by the extension of that of the contraction of arteries, advanced by Mr. Marand. It received a support

from the respectable surgeons, White, Kirkland, and Aitkin, of England. Under its influence surgeons applied to bleeding surfaces astringents of the most powerful kind.

Mr. John Bell, in his valuable works on the principles of surgery, objects to these various theories, and advances one of his own. He refers the cure of hemorrhages to the occurrence of something like the adhesive inflammation in the inner coat of the artery.

This idea of Mr. Bell appears perfectly correct, and he might have added, that the union of the arteries must be accelerated by the pressure of blood effused in the surrounding parts, as supposed by Pouteau, as well as by the contraction of the artery, as observed by Marand.

The consideration of the above led me to conceive of a treatment of arterial hemorrhages different from the usual one. If the adhesive inflammation in the inner coat of the artery prevented the flow of blood, it appeared that this might be more readily excited than is commonly done. When a ligature is applied to any flexible tube, so as to compress it, there are produced irregular folds or rugæ, not only immediately under, but above and below the ligature. When this is done, to stop the bleeding from arteries, particularly of the larger kind, these irregularities prove a considerable impediment to the proper union of the sides of the artery. But this is not the only respect in which the use of the ligature seems defective. It produces, in consequence of this unequal compression on the irregular folds of the artery, the ulcerative and suppurating inflammation, which is followed by the secondary hemorrhage, so often the cause of death. To prevent these inconveniences, I imagined it only necessary to bring the sides of the artery precisely and regularly in contact, so that pressure might be made equally on every part, and consequently one common action, the adhesive inflammation, excited. With this view I conceived of applying a pair of common forceps to the artery, with a screw connecting together the two handles, so that by the turning of this screw any necessary approximation of the blades could be produced. The readiness with which the correctness of my idea could be ascertained was such, that not many days elapsed before I submitted it to the test of the following experiment.

A large dog was confined, and his femoral artery laid bare. A pair of forceps of a delicate construction were then applied

to it. In place of a screw, the compression was regulated by a string tied around the handle of the forceps. The wound was then bound up, and the forceps properly supported by bandage. The forceps was kept on the artery for sixteen hours, when it was removed, and the dog permitted to go about the house. In six days the wound was healed up entirely, and I killed the dog. On examining the femoral artery, very greatly to my satisfaction, I found that part of it to which the forceps had been applied perfectly united, so that a probe could not pass, and the limb was supplied with blood by anastomosing branches. This experiment was successfully repeated by myself and one of my friends, remarkable for his accuracy. We contemplated making other comparative experiments, and operating on the abdominal aorta of the dog, but could not conveniently make the necessary preparations.

I shall not at present say any thing concerning the good that appears likely to result from the use of such an instrument as the above forceps in amputations, and in divisions of the large arteries in any part. Having not yet been favoured with much business in my profession, I cannot speak from experience; but I must hope that those who have opportunities will be pleased duly to consider this subject, and apply the forceps in such cases as in their eyes may seem expedient.

Of the treatment, however, of aneurisms, I beg leave to say something. The many attempts that have been recently made at innovations in the method of cure, clearly show that there remains room for improvement. Of these I will take a cursory review.

In a few instances Heister and some others have used compression successfully. But the insufficiency of this method did not require an extensive experience to disclose. It was found necessary to tie up the artery, and the celebrated Ruysch was the first who ventured to tie the brachial artery in the city of Amsterdam. The use of the ligature has since been extended; and it seems astonishing that it was reserved for the great Mr. Hunter to introduce the practice of tying up the femoral artery in popliteal aneurism. Tying up the artery is now universally practised in aneurisms, from dilatation as well as those from punctures, since the unsuccessful efforts of Mr. Lambert and others to sew up the orifices. In aneurism of the popliteal artery, Mr.

Hunter proposed applying one ligature to the artery just before it perforates the tendon of the triceps adductor muscle. This did not succeed as effectually as was wished, in the hands of others. Mr. Pott operated in one instance, and in consequence of the too long detention of the ligature, such abscesses and sinuses were formed as obliged him afterwards to amputate the limb. In other respects the ligature has proved hurtful. It has frequently been the cause of the secondary hemorrhage, which so often proves fatal. The difficulty of regulating the compression by the ligature is such, that it is sometimes drawn too tight, so as to produce an immediate gangrene underneath it, and consequently a too early separation of that part of the artery; while, in other instances, it is not drawn sufficiently tight, and is, consequently, too long retained. It was afterwards proposed to apply two ligatures, and to divide the artery between them, in order to prevent the too long retention of the ligature; and Mr. Cline, to prevent the ligatures from coming off, advised passing the needle through the cut ends of the artery. It requires no great discernment to discover that this could have no influence when the ligature is drawn so tight as to produce underneath an immediate gangrene. The too great irritation, and consequently tendency to ulceration, caused by applying a bit of cork or leather to the artery, excludes them from use; and the same objection may be justly urged against applying four ligatures, and leaving two loose, to be tied only in case of the secondary hemorrhage. The difficulty of applying the ligature to a deep seated artery is no inconsiderable objection to its use. Mr. Home observes, that the expert operator, Mr. Pott, was some time engaged in taking up the femoral artery; and, with much illiberality he intimates, that it was not certain even then that the artery was included in the ligature. In one instance I saw the brachial artery a little dilated, and it was some time before Doctor Weems, who operated, could draw the ligature sufficiently to stop the hemorrhage.

The instrument recommended by Mr. Duschamps has no advantage over the above methods, and is consequently not used. It will therefore be necessary to urge as an objection to its use its complex nature. But that accomplished scholar, Professor Wistar, made a more plausible suggestion. He applied a wire around the artery; and regulated the compression, by pulling this wire through a silver cannula.

Unfortunately, however, this did not succeed. The sharp edges of the wire and cannula probably caused the tetanus which followed, while the irregular folds in the artery, the ulcerative inflammation and secondary hemorrhage were not guarded against. It is to this gentleman's great candor and generous exertions to instruct his class that I am indebted for this experiment.

After most maturely considering this subject, I have no hesitation in concluding that the screw-forceps might be applied with great advantage. When the artery is exposed to view, where it is usually done, it could then be applied to it, and properly supported by bandage for a few hours. I am inclined to advise the treatment of aneurism by the forceps in preference to all other methods, for the following reasons:

1st. The forceps can be applied with facility, by less skilful persons than the needle and ligature, without including the nerves, which, from their firm substance, are found to resist the cutting of ligatures.

2d. It can be removed as soon as the adhesive inflammation is excited in the artery, which will probably be in twenty hours, and the complete recovery will be in one fourth or fifth of the usual time.

3d. The pressure can be regulated at will, so that nothing can be dreaded from too much or too inconsiderable a degree of compression.

4th. The artery not being divided, and the pressure being regular on the sides, there will be no danger of a secondary hemorrhage.

5th. As the forceps will be removed in a few hours, there will be no danger of abscesses, &c. which follow the continued irritation of ligatures.

6th, and lastly. The sides of the artery being brought properly in contact by the forceps, the union will not only be more speedy, but more effectual, than when the ligature is used.

These considerations have determined me to use the forceps in the first case that is entrusted to my care. Should it appear to others worthy of a trial, they will, no doubt, make the necessary allowances for the usually diseased state of parts in the human subject affected with aneurism.

A HISTORY *of the extraordinary* SEASON *of* 1804; *and of the luxuriant* VEGETATION, *great* RAINS, *and subsequent* SICKNESS *in August, September, and October; as they appeared near the River Monocasy and in the upper Parts of Maryland. Drawn up by* GRAFTON DUVALL, *M. D. of Fredericktown, (Maryland.)*

[Continued from page 24, and concluded.]

A Greater number of deaths among heads of families took place from this disease than for twelve or eighteen months before. Add to these the number of children, women and adults without families, &c. and I think we have a long catalogue of deaths attributable to the epidemic. To be sure the disease, in a large number, was so mild, that, I think, it would have gone off spontaneously, when the cold weather or frosts commenced, for the number affected was immense. In some counties of Pennsylvania; in Washington and Alleghany Counties in this State; and in Loudoun, Prince William, Fauquiere and Culpepper, in Virginia, the epidemic was malignant to an extreme. Late in November I visited the counties in Virginia which I have mentioned, and had much conversation with several respectable physicians residing in them. Our contiguity to Washington county, and my acquaintance with most of the eminent practitioners in it, enable me to make this remark justly. In those cases wherein death did take place, it was chiefly during the remitting stage of fever, or after the nervous symptoms came on, which sometimes happened where much blood-letting was indulged in, or where the inflammatory appearances were not properly and cautiously checked in due time. Such cases, however, did not often occur.

To detail the symptoms particularly as they appeared in the several species of intermittents, would be superfluous. It will suffice to observe that they were similar to those which exist in common seasons of the year, and in their usual manner and severity. The most difficult cases of cure with which I met, were those wherein the epidemic varied from a remitting fever and intermittent of the quartan, tertian and double tertian, to the *quotidian* type. In this last mentioned form it became unusually obstinate and distressing, and sooner than any other form of the disease produced symptoms of anasarca in the lower extremities.

The epidemic was rapid in its effects on infants and children. Many of those who laboured under it in its early approach, still discover the traces in the countenance which it has left; nay, some are yet labouring under its pernicious and dangerous influence. They appear to recover from its ravages less soon than adults. These and the middle-aged (in many instances) even appear to have fattened on it. Anasarcous swellings of the feet and legs, since the decline of the epidemic, very often occur in practice. It appears to proceed more often from debility in consequence of the long continuance of the disease than from any other cause. I have not heard of a case of ascites occurring in any person afflicted during its reign.

The proper method of cure, my dear Sir, soon presented itself. It was simple, easy to be observed, and capable of being promptly applied. It consisted chiefly in emptying and cleansing the primæ viæ, in obviating and removing febrile tendency, and in restoring and supporting the proper tone of the system.

To obtain the first desideratum, emetics were almost universally prescribed. Pregnancy, and a tendency to the head of the blood in impetuous circulation and action, were almost the only obstacles to the exhibition of this important and truly successful remedy. Old age and previous debility were not so much regarded, unless in late stages of the disease. I prescribed an emetic, which operated strongly, in the case of an old man between eighty and ninety years of age. He had much pain in the bowels, and was constipated. It relieved him speedily. Where the action of emetics was prompt and sufficient to bring off the contents of the stomach, its effect was that of a charm, if exhibited in an early stage of the disorder. It checked nausea and disposition to vomit, invigorated the circulation of the blood, relieved pain, and always contributed eminently to shorten the duration of the paroxysm of chilliness and fever. They frequently acted as preventives from disease, when taken immediately on the perception of the earliest premonitory symptoms. The symptomatic head-ach I have before described, generally gave way more to this than any other remedy. It oftentimes entirely yielded to an emetic. No particular time, in any stage of the complaint, was observed for their exhibition; they were given and repeated as the symptoms or the circumstances of the case required. If exhibited, however, previously to the approach and coming on of the *chilly fit* or

ague (as the case was), their effects were more apparent and demonstrable in shortening the paroxysm and in mitigating the distress occasioned by anxiety about the præcordia, which took place as soon as fever came on, and which was a very distressing symptom. The different formulæ of this remedy were vin. antimon. antimoniated tartrite of pot-ash, and ipecacuanha. An emetic bolus of calomel and tartar emetic was oftentimes given. I know not whether other practitioners gave a sensible preference to either of these; I certainly preferred, for several reasons, the antimonial wine.

To assist in cleansing the stomach and alimentary canal also, purgatives were essentially necessary, and their operation was always important. There was but one voice amongst physicians in proclaiming the superiority of calomel over every other cathartic medicine. To this was most generally added a suitable proportion of jalap. Sometimes a bolus of calomel alone was exhibited, succeeded the next day by an active dose of jalap. This was the mode I generally pursued, whenever appearances and symptoms taught me to believe that bile superabounded in the stomach and intestinal tube. In some instances, where the bile was extremely acrimonious, and much pain in the bowels was excited by its action, I found that the oleum ricini answered the double purpose of carrying off the fæcal matter generated in the intestines, and of sheathing their coats from its acrid qualities. But in such cases a repetition of the dose of this medicine was always necessary, as the oil has not that close, searching and deterging operation for which calomel is so remarkable. In the obstinate cases of head-ach I discovered that much evacuation by stool, as well as from the stomach, was necessary to remove the affection. Indeed, it was truly surprising to observe how well the system withstood the power of those two operations; how much the symptoms demanded them, and yet how little they influenced the circulation of the blood and the action of the pulse. While ever sick stomach, vomiting and pain in the intestines remained, emetic and purgative medicines were continued, even if a considerable remission or intermission had taken place in the fever, because experience taught that so long as those symptoms appeared or resisted the effects of evacuants, tonics could not be used with safety. In a case or two which fell under my observation, it was attempted to administer the bark after a few slight discharges from the stomach and bowels, with the effect of creating infinite pain

in those viscera, with violent puking, cardialgia and diarrhœa. Many complained of the effects of the bark; and not a few became prejudiced against this important and useful medicine, merely because it had such an effect on them as I have mentioned; but I am persuaded that if they had been properly disposed to receive its virtues by sufficient evacuations, that its effects would have answered every wish and expectation.

Other cathartic medicines were sometimes used. Salts, cream of tartar, senna, &c. were occasionally administered, for the purpose of preventing constipation after the successful operation of calomel and jalap. But I avoided this practice as much as I could, preferring *at all times*, with the exceptions I have mentioned, of extreme acrimony of the bile and the pain it produced in its passage through the intestines, that formula of medicine in which calomel was included; for it appeared to me, that three or four discharges from the bowels excited by this medicine, gave more relief, and brought off more bile than the plentiful operation of two or three purges of salts or oil. This was evidently the case wherever violent symptoms, as delirium, high fever, &c. occurred. I prescribed it in several instances wherein head-ach continued for a week or ten days after every vestige of fever was gone off, and the patients, having used a good deal of bark, had been taking exercise without effect, with the happiest success. Whenever given before the paroxysm came on, purges had the best effect in preventing nausea and sick stomach, in lessening the fever, and in shortening its duration. They also partially relieved the excessive thirst, and mitigated the oppression of the præcordia. I did not witness a single case in which they operated with too much severity; nor did it happen within the circle of my practice that a ptyalism and sore mouth was produced by them in any instance.*

After the necessary evacuations were obtained to lessen the fever, many remedies of different kinds, according to the prepossessions of the practitioner, were used. The salt of tartar, however, of the shops, seemed entitled to the preference. When given in the form of the saline mixture of the dispensatory, in a state of effervescence, united with

* Several cases occurred to other physicians, as I was informed, in which a salivation came on often in consequence of the exhibition of cathartics; one of the component parts of which was calomel.

the citric or acetic acid, it had a very pleasing operation in removing nausea, preventing vomiting, obviating thirst, and producing perspiration. I was first led to prescribe it in the case of a patient in whom the disease first made its appearance in the garb of a cholera morbus. She had been puking constantly and violently for four hours and a half before I saw her; had an immoderate and almost inextinguishable thirst; pain in the stomach and head-ach. Her eyes appeared hollow; she could scarcely be heard in speech, and the pulse were hurried and reduced. Her cries for cold water were incessant, and whatever was drank gushed back in a stream to some distance. Doubtful whether she could now well sustain the operation of an active emetic, and believing it impossible at all events to keep any harsh medicine on the stomach, I determined, if possible, to restrain the vomiting, and allay the irritation of the stomach. To accomplish these ends I administered a solution of the sal. tartar. in cool water, in doses of a table spoonful, to which sharp vinegar was added, until effervescence took place; during which the patient swallowed it. It was ordered to be given every half hour. After the second dose she did not puke, but the remedy was persevered in, and a moist skin and revived eye soon became apparent. The cardialgia and head-ach vanished; the action of the pulse was restored; thirst no longer prevailed; and in six hours after the first prescription of the medicine she was able to sit up and retain on her stomach all the nourishment which was ordered for her. The next day she took a bolus of calomel and tart. emetic, which operated well; but on the day after the symptoms returned, not, however, with so much violence, and were again checked by the same remedy, and so on alternately every other day, in the same manner that an ague would recur. After plentiful evacuations I treated it as a case of intermittent, with bark, and the patient recovered. After the issue of this case I prescribed this medicine as a febrifuge, in almost every case. It was sometimes gently laxative; and to encourage that operation I occasionally added magnesia. Nitre, in all its forms, appeared to irritate the stomach. It could not be repeated as often as the circumstances of cases sometimes required; and at best is so inelegant a preparation, and is so disgusting to the taste, that I confess I do not admire it. Some practitioners prefer the water of acetated ammonia (Spirit. Mindereri) as a febrifuge, but this also was liable to some of the objections

which are justly made to the several preparations of nitre, and besides it requires much nicety to determine the point of saturation, and is impossible almost to prevent its becoming flat and sour. In fine, the salt of tartar was the most successful, pleasant, and convenient fever medicine which was used, and I do not hesitate to say that it deserved more reputation than any other kind of medicine for its qualities in affecting the bile and lessening fever.

Blood-letting, as a remedy in this disease, was not neglected, although it was not as often found necessary as might have been reasonably expected. In all tendencies to local inflammation, determination of the blood to the head, violent pains in the head, back or limbs, phlebotomy was resorted to. Of such cases but few occurred. I do not recollect to have bled the same person more than twice during the existence of the epidemic; several I bled a single time, but numbers were cured without a bleeding. It became more necessary in the last weeks of the existence of the epidemic than in the early stages. I attended more to the state of the system, as indicated by the pulse, in judging of the necessity of blood-letting than to any other symptoms. Some physicians, I believe, bled invariably for head-ach, &c. but if this was symptomatic, as it certainly was in numerous cases, the operation gave no relief. I will not say that blood-letting was *never* necessary, but I am free to declare that it was *very seldom* required in proportion to the number who sickened of the complaint. Symptoms accompanied with pain were more often *the effect* than *the cause*, consequently that was the proper course to be pursued, which rather went to apply the axe to the *root* of the evil than to lop off the *branches*.

Epispastics, in which I include *sinapisms*, were of much utility in all stages of the disease after due and proper evacuations were obtained. When applied behind the ears, on the hind part of the neck and between the shoulders, they were of infinite service in relieving pain in the head and eyes. It was the usual practice to apply them to any part where pain existed, as the legs, arms, &c. Sinapisms, composed of the most powerful rubefacients, were a happy remedy in removing head-ach, even in the very earliest stages of the disease, when blisters failed. They acquired much celebrity for the success and promptitude with which they acted, and were, generally speaking, I think, of more service than blisters. I have known them to remove head-ach in

five or six hours, after more than one blister had been applied to accomplish the same object, although each acted well on the skin. The first application of them relieved me from excessive head-ach and delirium. It appeared to me as though blisters in several instances had a material influence in effecting an intermission in the fever of some of my patients. Whether this was the case I could not positively decide, but intermission did several times take place shortly after the successful operation of an epispastic. Their stimulating qualities also had a good effect in equalizing, restoring, and supporting the excitement necessary to regain health.

The remedies I have mentioned were all necessary in their proper times and in suitable circumstances. They were all preparatory to, or made way for that invaluable remedy and antidote to intermittents, the *bark*. The credit of a complete cure *in almost every case* was reserved for this celebrated medicine. The benefits derived from it by thousands, attest its value, and bespeak its praises. *The red bark was unquestionably the most successful in its effects.* Persons in whom the cure was effected by this kind of bark, were much less liable to relapse than those who took the pale bark. I hope there is nothing of prejudice or prepossession in this assertion. I had, in the commencement of the epidemic, nearly an equal quantity of each, and having heard oftentimes expressed a doubt to which the merit belonged, I determined to observe the effects of each. My testimony is clearly and decidedly in favour of the red Peruvian bark. It is less disgusting to the taste than the other kinds, lies better on the stomach, and appears to subject the disease to its own power sooner and more effectually. I had several cases, in which I prescribed the pale bark in intermissions of fever without the effect of preventing its return, in which the red bark afterwards completely arrested its career. In cases in which the stomach was very irritable, and there were a very great number of these, the bark in decoction was administered with the happiest results. If it happened that even this formula was too powerful or rather disagreeable to this much harassed viscus, a proportion of aromatic ingredients and wine were added with much advantage. Most practitioners gave a preference to red port wine; but inasmuch as this kind of wine abounds more in acid, and by its astringency is more apt to constipate than pure white wines, I preferred

these last: for although astringents possess more or less of tonic qualities, yet I preferred such remedies as were *tonic* in their effects without astringency, as far as I could carry the principle.

In cases of much debility and danger, and in those of pregnancy, &c. we were oftentimes constrained to prescribe the bark even before an intermission in fever had taken place. Whenever the remission was considerable or sensibly to be perceived, the medicine was administered in such cases with considerable benefit. In those instances headach also presented no obstacle, and I have observed this symptom, with fever, heat, thirst, &c. all decline as the bark was persevered in. In the intermissions bark was pushed to the utmost to prevent a recurrence of the fever. An ounce a day was frequently taken with the successful effect of putting a stop to the disease. Whenever this important remedy failed in curing the disease, in the course of a few days, or lay disagreeably heavy on the stomach, or produced cardialgia, puking, a pain in the stomach and bowels, the necessity of cleansing them was strongly indicated. Immediately after which, the remedy usually had every desired effect. In several instances I added the serpent. virginiana, according to the mode of Dr. Lysons, with much efficacy, to the bark, where this medicine alone had been long continued, and had been given without checking the disorder.

Columbo, gentian, &c. were frequently given, chiefly in the form of bitters and tinctures, after bark, to preserve the tone of the system and to prevent relapses, which were extremely common, and continued to occur for a long time after cold weather had commenced, mostly in the form of ague and fever. To these were added orange-peel, camomile flowers, Virginia snake root, cinnamon, &c. in quantities and proportions suited to the situation and circumstances of the patient. They were very serviceable. In several instances where I supposed the stomach to be much affected, I prescribed the columbo, in powder, with very sensible advantages.

The aromatic acid of vitriol (elix. vitriol) was a very common prescription with some physicians. They supposed it calculated to check the disposition of the body to excessive sweat, which was a common circumstance in all who had been afflicted with disease. I could perceive no such benefit to accrue from its use. When given as it

usually is, in cold water, it is cold to the stomach, sour, and very apt to produce diarrhœa and pain in the bowels and stomach, upon which those tonics acted best, which were warm, aromatic and cordial. Nor did this medicine restore appetite, for which purpose it was often given. If the tonics I have mentioned previously had not this effect, it was reserved for exercise to re-instate what disease had deranged.

The most difficult cases to cure, with which I met, were those in which the epidemic changed from the various forms of fever which I have noticed, and became at last a *quotidian*. The worst agues by far, which I witnessed during the whole season, were those which occurred daily; I saw one person in whom the shaking might almost be said to be convulsive. If ever death did take place in an ague fit, it must have resembled this case; the difficulty of cure arose, I suppose, chiefly from the narrowness of time in which bark could be administered, between each paroxysm. In such cases also anasarcous swellings more often came on. In one case of this kind, a female, who had been for eight or ten weeks under the care of another physician, presented herself to my attention. She had taken vast quantities of bark in every form without relief. Upon being requested to visit her, I found her in a debilitated situation, with swelled feet and legs, subject to daily returns of shaking ague and fever, and excessively severe head-ach and thirst, which were always preceded by severe vomiting. Her skin was discoloured with bile. Her pulse were not disordered much. Supposing that she had not been sufficiently evacuated, I ordered an emetic, which operated well. This was followed by a bolus of calomel on the same day, and the patient took a dose of jalap next morning. These all acted as well as could be expected, and relieved no symptom but the swelled feet and legs; the ague, fever, vomiting and violent head-ach still recurred every day, and the yellowness of the skin remained. To quiet the stomach, remove thirst, &c. I prescribed the saline mixture, which mitigated these symptoms in some measure. Finding, however, no material relief, I ordered a second emetic, which was followed, as before, first by a mercurial bolus and afterwards by jalap. These remedies seeming to make some impression on the patient, in a day or two afterwards I ordered a purgative, twenty and ten grs. of jalap and calomel, which acted with promptitude and severity. Still the ague returned, with less

violence, as did also the remaining symptoms, and the patient yet complained. I then prescribed equal parts of flor. sulph. and crem. tart. to be taken in large doses three times a day, for the purpose of keeping up a constant alvine discharge, to be regulated by circumstances. At the end of a week from this time the patient was freed from ague and fever, head-ach, thirst, yellow skin, swellings, &c. I still continued her on this regimen, less strict, however, for several days longer. At this time her system was well prepared for the tonic regimen; and as she had used bark without effect until she had become disgusted with and loathed it, I completed the cure with columbo, astringents, and aromatics in the form of a tincture.

Throughout the term of indisposition the patients used warm demulcent drinks and teas (herb) of almost every kind, as well as cool water; and the diet was generally nourishing, although light, as broths, boiled chickens, &c. until convalescence had taken place, when a more cordial regimen answered better. I need not dwell on these minutiæ.

Having thus, my dear Sir, given you a detail on this interesting subject, such as memory enables me to do at this distance of time, without a note taken during the prevalence of the epidemic, I trust you will find it to answer the intended purpose; you will at least be enabled to judge wherein this fever resembled the endemic fever of our sea-ports. Making a sufficient allowance for the confined atmosphere, the heated walls and pavements, the dirt and corrupted trash of the streets, alleys, common sewers, docks, and manufactories; all which assist to render more malignant any fever which is originated; and I think every reflecting mind will at once acknowledge the identity of the endemic disease of the large cities, and the epidemic as it lately prevailed in the interior of the country. With the difference of the exciting causes, in their degrees of morbidity, I think we feel as much malignancy in the remitting bilious fever as the inhabitants of the sea-ports. The symptoms are the same; the causes are the same; the effects of them are the same; and the method of cure is the same. The difference in the degree of violence with which it affects the body in cities and in the country, is altogether from the *causes* I have mentioned, and not at all from the *qualities* of the disease-producing principle, which I consider the same whether they carry pestilence to the

citizens of a sea-port, or are content to infest the dwellings of the more temperate inhabitant of the country.

The prevalence of so malignant an epidemic in the interior and otherwise healthy parts of our country, must certainly shake the opinions of the believers in the importation of the yellow fever. When they find the same disease committing such havock amongst the very mountains of our country, they must find themselves much at a loss to prove its foreign origin. A contagious disorder cannot possibly be smuggled; and even if it were possible, the extraordinary watchfulness of our officers and Boards of Health would detect the contraband article. When the yellow fever raged in Philadelphia in 1793, the bilious fever was extremely malignant and fatal here and in the neighbourhood. It was equally fatal in many parts of the United States. It prevailed also, but in degree much more slight, in 1795. In 1798 it was very fatal in this town and country adjacent. I hope the time will soon come when we shall hear nothing more of *an imported contagious yellow fever* in our country.

I shall conclude this long letter, my dear Sir, with a few notices of the epidemic as it departed from the usual progress of fever in general. I saw nothing which seemed to denote a *crisis* in this disorder. Critical days did not influence it in any respect.

The disposition to relapse was unusual and extraordinary. *The relapse, however, always threw the patient into an intermittent fever.* Very few, indeed, when recovered from a remitting fever, relapsed into the same type again. The disease seemed to change from one to the other, from natural causes, in many instances.

In many the intermittent would go off spontaneously, and remain absent as long as it had before affected the patient. It was the case with myself. After recovery from the remitting fever I remained well for eight or ten days. I was then seized with an ague and fever, and had it every third day for three fits; it then went off, and I remained clear of it just as long as I had had it, and so on alternately for seven weeks. It observed the exact time in duration for both its visits and absence. It lessened in violence on every return.

I saw a lady who would have a fit of ague in succession every day for five days, and then be clear of them for five days, and so on for eight or ten weeks.

A young lady in the country, I was informed by one of

the family, had an ague on every Friday, Saturday and Sunday evening, and for the remainder of the week felt no indisposition. The disease affected her in this manner for six weeks. It finally went off with violent pain and swelling in the knees, legs and feet.

A patient of mine had a cholera morbus every third day for several days, and a sickness of stomach afterwards, which observed the same periodical return that an ague would.* Bark cured it.

My father visited Bath, in Berkely county, Virginia, for his health, according to his annual custom, and sickened there. He got home with difficulty, and the disease changed from common chill and fever to periodical head-ach and fever. The head-ach regularly came on at the same hour every evening, and went off in six hours. It was severer every other evening. I treated it as a common intermittent with success.

A young man living next door to me had the disease, and relapsed several times. One night, on the approach of a paroxysm, he jumped into a creek just by the door. This was late in the season. He never felt it afterwards, being completely cured. No ill effect followed.

A post-rider, Levi Adams, was taken in Hagar's-Town with the prevailing complaint. He took both an emetic and cathartic, neither of which operated. He brought down the mail and delivered it at the office; afterwards got on his horse with difficulty, and went to the place where he usually lodged, crept into the house, and after saying that he was sick, lay down and never spoke again. I saw him in three hours: he was senseless, and his breathing laborious; foamed at the mouth. Medicine could not be forced down his throat. He was bled repeatedly, blistered, and had sinapisms to his feet. He died in about thirty hours. He had drunken excessively of cold water.

After convalescence had taken place in the old gentleman whose case I have mentioned, an erysipelas appeared. When this vanished a violent inflammation in the eyes came on, which was removed with some difficulty.

To enumerate concisely the different remedies which were employed by many would be a tedious task, and would

* This patient relapsed afterwards, and on the first attack had a chill; but the complaint assumed its old form of vomiting and sick stomach periodically, and was again cured by the red bark.

lengthen this letter beyond the limits of my design. They were generally such as you would suppose to originate from superstition, credulity, or ignorance, or the combined influence of all. They would disgrace the human mind, and deform the historic page.

According to all the accounts which I received, the epidemic must have raged much more violently in Washington and Alleghany than in Frederick county, in this State. In those counties the robust generally fell victims to it. It was sudden in approach, and often, too often sudden in fatality.

In a conversation with a practitioner of medicine in Loudoun county, Virginia, he informed me that the healthy and robust in that county were more subject to the attacks of the epidemic, and that it was more fatal to them. Old people escaped wonderfully. He says that irritability characterized the disease more than any thing else. It was almost impossible to reduce or remove it. Their systems, even in perfect intermissions of fever, would not bear that mild tonic, columbo. In such cases a single dose of bark would bring back the long train of horrible symptoms. The system continually ran into a disposition to become gangrenous, or mortify wherever blisters had been applied. A number died in this way. Mercury and the alkalies formed their chief plan of cure. But it is lamentable to state, that notwithstanding the utmost efforts of medicine and the healing art, the disease was extremely malignant and mortal.

Having no established medical correspondents to the westward, I cannot undertake to give the most faint general outline of the epidemic as it appeared at any distance from us, lest I should record what were not facts, and run the risque of making a representation of the subject which examination would not support, and experience might contradict. I presume that you will receive some accounts from the practitioners in the various parts of the Union in which it made its way. In this manner useful facts might be perpetuated, and science be considerably improved. An useful, well established fact will oftentimes direct our steps to, and point out the right path, when the fascinating, but visionary theories of the most splendid and ingenious imagination would fail to discern it.

If this account, imperfect as it is, will in any manner subserve the design you have formed of exhibiting an history of our domestic distempers, I shall think myself fully repaid for the time I have dedicated to it.

REVIEW.

ART. 1. *A Treatise on Tropical Diseases; on Military Operations; and on the Climate of the West-Indies. By Benjamin Moseley, M. D. &c. 4th edition*, 8vo. p. 670. *London*, 1803.

DISSERTATIONS on various important subjects are bound up in this ample volume; and several of them treat expressly upon American topics. We therefore consider it as claiming notice in our review. If, indeed, we had announced it as early as it deserved, our readers would have had an account of it more than a year ago; but we have had such an incessant press of matter that there seemed to be almost an impossibility of offering it to their consideration sooner.

The contents of ths book are as follow: 1. A memoir on *the Climate of the West-Indies.* This occupies one hundred and forty-three pages, and contains many interesting facts. 2. A tract *on Military Operations in the West-Indies*, in 1780 and 1781. This fills seventy-five pages, and is replete with valuable information on campaigning and the sickness of soldiers and sailors. 3. A long and learned *Essay on the Dysentery;* extending from the two hundred and twenty-first to the four hundred and fifth page. 4. The fourth piece is on the disease which the author calls by the name of *the Endemial Causus*, commonly called the yellow fever of the West-Indies. This runs about seventy-two pages further, and is the result of Dr. M.'s practice and experience. 5. The subject of the next tract is *the Tetanus or Locked-Jaw*, in about fifty pages more; then follow four shorter performances, such as, 6. Some remarks *on Cancers;* 7. Observations on *the Belly-ach or Colica Pictonum;* 8. *On the Virtues of the Solution of White Vitriol;* and, 9. *On Hemorrhages from the Lungs.* Those several treatises extend to about thirty-eight pages. Next follows, 10. The authors elaborate inquiry into the *Influence of the Moon* upon the human body, and especially upon the type and crisis of its diseases; which fills the remaining eighty pages of the volume. This table

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"When the warm latitudes are reached, it becomes every person to prepare his body, by temperance, for the unavoidable change it must undergo: and to people of a gross habit, and of a strong and full constitution, a mild purge or two, or frequently diluting with a weak solution of cream of tartar in water, if not bleeding, is necessary. The neglect of these precautions occasions violent perspirations, troublesome heats, and eruptions.

"Head-achs, without fever, from the rarefaction of the blood straining the tender vessels of the brain, frequently attack people, on first entering hot climates, at sea, as well as on shore. These head-achs are often attended with giddiness, and sickness of the stomach; and also with great distress, unless the rays of light are excluded, which, by irritating the optic nerves, aggravate the complaint, and excite other disagreeable sensations. The cure requires only bleeding, putting the patient's feet now and then in warm water, and keeping him in a dark place. A purge may be necessary if these operations do not relieve, and if heat or costiveness accompany the disorder.

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"In regard to the article of dress, new-comers cannot do better than follow the present custom of the residents on the islands: their clothes should be light, made easy, and every way free from confinement. Formerly the inhabitants of

the West-Indies wore heavy European garments, covered with lace. The inconvenience attending that custom induced them to an opposite extreme; and here they found that wearing linen, cotton, or silk coats, though agreeable enough in the sun, and in the day-time, was not a sufficient defence against any sudden change of weather, or the night air. A thin cloth coat, therefore, and every other part of the dress as light as possible, is now worn by people in health.

"For women, the light summer-dress of Europe is proper.

"Most people, soon after their arrival, are attacked with what is called the *prickly heat*. This is an eruption of small red pimples, unattended with any fever, which breaks out in different parts of the body, particularly where the parts are kept the hottest by the clothes, or where there is the greatest irritation and friction. It causes such intolerable itching, or heat, and pricking in the skin, that human resolution cannot refrain from scratching, until the skin is sometimes excoriated. Many people have it every year, more or less, during the hottest months. It generally goes off in a few weeks, leaving the cuticle scurfy, which falls off in small white scales. Sometimes it continues very obstinate, and where people live heated by intemperance, or have any serpiginous humour in their habit, it fixes it on the surface of the body, in troublesome ring-worms.

"There is great danger in repelling the prickly heat; therefore cold bathing, and washing the body with cold water, at the time it is out, is always to be avoided. A gentleman, a native of the country, bathed in the Spanish-Town river, in Jamaica, in the month of July, 1779, with the prickly heat on him; which struck in by it, and caused a tedious fever, with an affection of the brain; from which he recovered, but his mind was for a long time afterwards impaired, by a stupor and despondency.

"When the prickly heat is very troublesome, abstemiousness, with a cooling regimen, will soon remove it.

"Besides the prickly heat, there are, in the West-Indies, vesicular and exanthematous eruptions and efflorescences, to which new-comers, and others, are sometimes subject in the hottest months; which resemble the Ἰδρωτα, *Papulæ*, *Sudamina*, *Essere*, and what Hippocrates calls Φλυκταινας, the eruptive produce of summer in temperate climates.

"New-comers are often greatly distressed when travelling, or otherwise exposed to the sun, if any part of their face or neck should be unsheltered by their hat, or their hands by

their gloves. Such parts are subject to be painfully inflamed, or blistered by the scorching solar rays.

"There is a race of visitors also which gives some uneasiness to new-comers; these are gnats, or, as they are called, *musquitoes*. They are most troublesome towards night, in warm wet weather, and near woody, damp, or marshy situations. Italy is infested in the same manner in the summer-time, wherever there are rivers and stagnant waters; which I have experienced in many places, and can justify Horace's complaint in his marshy journey from Rome to *Fundi*, in his way to *Brundusium*.

"Though *musquitoes* are a great vexation in all the islands, yet they are worse on the continent. It is said at *Mexico*, and many other places, that they sometimes kill people with their bites. Sir Henry Morgan thought, from the amazing quantity which he saw at the lake *Maracayba*, that it was a cloud before him.

"Their bites raise little lumps, or swellings, in the skin, which cause an uncommon degree of itching; these are scratched sometimes into painful acrid ulcers, particularly in the legs. A bite, if not scratched or irritated, though extremely disagreeable, will not long continue troublesome. Some people apply oil, vinegar, lime-juice, or camphorated spirits, to the part, to allay the itching and tingling. In the inland and woody situations, even those who have been long resident in these countries, find it convenient to wear a sort of loose linen buskins, to guard their legs in an evening; and it is an universal custom to have a gauze curtain, or net, to surround the bed, to keep them away by night; otherwise, in some places, it would be impossible to sleep.

"Fire and smoke drive them away; and this is another practice used by people who reside in the woods, and interior parts of the islands. On the continent, near woods and stagnant waters, the Indians bury themselves in sand, in an evening, having no other means to avoid their persecution.

"Another tropical insect frequently attacks the feet and toes of new-comers, and surprises them with an unusual sensation of itching. The residents are equally subject to the plague of these almost invisible vermin, and are sometimes lamed by them. These are *chigoes*, a kind of little fleas; they chiefly keep in dusty, dirty places, and are bred on hearths, and in chimney-corners, among the ashes: they are about the size of a cheese-mite. They lance the skin imperceptibly in the soles of the feet, or about the toe-nails,

and insinuate themselves, where they deposit their eggs, including their eggs and themselves in a little round vesicle, which increases to the size of a small pea sometimes before it is noticed. It then acquires a blueish appearance, from the colour of the chigo itself, which is in the midst of an innumerable quantity of *animalcula*, each of which is capable of creating a new disturbance, if, in taking out the bag, it be broken, and any remain behind in the flesh. Some people have had great inflammations from them, and some have had their toes mortified. The negroes often let them collect and remain in their feet until their toes rot off.

"The common method of taking out the bag is with the point of a needle, without piercing it, by separating it from the skin quite round, and drawing it out; then filling up the hole, and rubbing the part with tobacco-ashes. Ligon says, he had ten chigoes taken out of his feet in a morning, while he was at Barbadoes (which was from 1647 to 1650), by the most unfortunate Indian woman, Yarico.

"There is also abundance of scorpions, tarantulas, centipedes, and spiders, whose venomous stings and bites are very painful, but rarely attended with danger. The tarantulas have their habitations in loose rocky places, and in the mountains; and those other insects are generally found in old buildings, among rotten wood, and in unfrequented places: sometimes they creep forth into beds, and among people's clothes, particularly scorpions, and are not detected until they are discovered by their sting. Rum, or oil, applied, generally abates the anguish of the wound: but if a fever, with convulsive twitchings, ensue, which in bad habits of body, or when the wound is in a part of great sensibility, will sometimes happen, the wound should be immediately slightly burnt with *lapis infernalis*, or any caustic, and afterwards poulticed, and the patient should take some warm diluting diaphoretic, with an opiate.

"But though these inconveniencies are found in the islands, there are none of the greater evils with which the neighbouring continent abounds; such as tigers, lions, bears, wolves, and deadly venomous serpents."

The following remarks and directions are important to those who visit the West-Indies, either for the purposes of trade, settlement, or health. And they will enable the speculative inquirer to form a correct opinion of those regions with which the inhabitants of the United States have such extensive and unceasing intercourse.

"As the places where wood and water are obtained in hot climates are generally swampy and unhealthful, sailors who are sent from their ships on shore to procure those articles, ought never to be permitted to sleep there;—and if they are seized with any disorder, they should be immediately removed on board their vessel. Many instances of great mortality have happened from laying in wood and water in these climes; and ships have been often obliged to hasten from an unhealthful coast, and put to sea, with scanty allowance, without people in health sufficient to do their duty.

"The aspect of an house may be towards any other quarter than the west; but this will depend on situation, in some measure, and the construction of the building. For if it have only a single roof, in a long narrow range from north to south, and that the front be to the east, the sun will bear all his force on its largest surface from six to eight in the morning; and, for the same reason, on the west side, from four to six in the evening; and render it excessively hot. If it range from east to west, the morning and evening sun will have less surface to act on, and the building must necessarily be cooler; as the meridional sun acts nearly the same on the roof, let it be placed how it may. But the east should not be excluded on account of the breeze, and the afternoon shade and coolness; then, if the building be single, a north front, with windows, piazza, and balcony to the east and south, has the advantage. But if the building be large and double, an east front is on the whole the best plan for an house in the West-Indies.

"These observations are equally applicable, whether the building be intended for a dwelling-house, or barracks for soldiers, or an hospital: and what Bacon says of houses in England, is pertinent to the same subject in the West-Indies—'It were good for men to think of having healthful 'air in their houses; which will never be if the rooms be 'low-roofed, or full of windows and doors: for the one 'maketh the air close, and not fresh, and the other maketh 'it exceedingly unequal, which is a great enemy to health.'

"The dread of earthquakes, together with the consideration of economy, in the West-Indies, induces many people to build their houses very slight, and chiefly of wood; by which means they are subject to extreme heat by day, and extreme cold by night. Large rooms to keep the rays of the sun at a distance, and thick stone, or brick walls, to

prevent their pervading, constitute the only requisites for a cool, healthful, and pleasant house in hot climates: for in rooms thus constructed, a great volume of air is cooled and condensed, that cools and temperates the external hot air, which is admitted for its renovation. Such are the public buildings, hospitals, and houses in Italy;* from the amplitude of which, the inhabitants of Rome and other places, besides qualifying the parching heat in summer, shut out the Sirocco and other unwholesome winds, and often secure themselves against the reigning epidemic; and against heaviness of the head, catarrhs, and inflammations of the eyes, diseases which afflict particular towns and situations, when moist southern winds prevail.

"That mountainous situations are very healthful in the West-Indies, we have many proofs; and that people who have been ill in the lowlands, soon recover their health in the mountains, and avoid the trouble and expense of coming to Europe.

"At Mr. Hinton East's mountain, above the banks of Hope river, in Jamaica, the temperature of the air being at about 75°, is moderate and agreeable. In a garden there, belonging to this worthy gentleman, there are a multitude of European productions in their native beauty. There are also the *Mango*, *Mangostan*, *Jack tree*, *Camphire tree*, *Gum Arabic tree*, and several of the spices of India; among which, the *Cinnamon tree* flourishes in the highest perfection; two plants of which, each about six inches long, were brought to the island in June, 1782, in a French vessel bound from the isles of *France* and *Bourbon* to *Hispaniola*, but taken and made a prize of by the *Flora*, an English frigate. These plants, with some others, were intended for the governor of *Hispaniola*. This is the introduction of that valuable tree at Jamaica, which suits so well with its growth, that the two original plants blossomed, Mr. East informed me, and bore seeds in 1785, from which he has produced many others; and it is probable, that the birds, which have every year robbed his trees of a considerable quantity of seeds, will plant many more in the woods, and that *Cinnamon trees* will be found growing wild there, and give rise hereafter to doubts concerning their origin.

"* On an hot day in summer, the thermometer will be at 62° in St. Paul's church, when it is at 70° in any common house, 75° on the shady side of a street, and 80° in the sun."

"If people, when they retire to these mountains for health, could leave their cares behind, and avoid the importunity of business, which is very difficult from the proximity of their homes, there would be less occasion for European voyages than is generally believed. But they are too near the interesting scene which perhaps disturbed their health, unless they can resolutely determine to have no communication with their counting-houses and plantations: for in reality, coming to Europe, to the generality of people, and where a sea-voyage is not absolutely necessary, is only cutting off the communication with care and anxiety, and giving the mind that relaxation which is necessary for the restoration of health.

"Some of the mountains at the back of *Kingston*, in Jamaica, and in many other parts of the island, are remarkably healthful. At *Cold Spring* Mountain, which is computed to be about fourteen hundred yards above the level of the sea, the thermometer is on an average 68°, but sometimes much below 60°, though the distance is not more than two hours ride from Kingston; where it is on a medium at 83° of *Fahrenheit's*, or 22°½ of *Reaumur's* scale.

"The *Maroon Negroes*, who live in the different mountains in that island, are active, enterprising, and hardy. But as those mountains are very fertile, and all the necessaries of life procured with ease, their wants are supplied without trouble, and they are equally strangers to affluence as to industry.

"The inhabitants who cultivate the Coffee and Provision Mountains in *Liguanea*, when they descend to the plains, have the looks of newly-arrived Europeans.

"The troops that are stationed in the island should have barracks in these cool mountains, where they might use exercise, keep their health, and live well by cultivating provision gardens for themselves, as land is cheap; instead of being placed in the hot lowland towns, where they can neither be made good soldiers nor good citizens, and where they rot and perish from diseases brought on by excessive heat, indolence, drunkenness, and debauchery.

"The same cause, in the years 1781, 1782, and 1783, made such havock among the French and Spanish troops at the *Cape*, in Hispaniola, that they were obliged to be dispersed about in the country, or else it is thought that very few of them would have been fit for service, or ever have returned to Europe. The French government, I have been

informed, has since had it in contemplation to erect barracks and hospitals for their troops in the quarter of *Dondon*, a mountainous situation, eight leagues from the *Cape*, and to remove the garrison there, or at least to make it a retreat for convalescents."

We offer no apology for copying the ensuing sentences, as their value will instantly be apparent to him who glances his eyes over them. They follow a number of acute and critical observations, made by Dr. Moseley on some of the West-Indian authors, particularly TOWNE, HILLARY, POISSONNIERE, ROUPPE, CHEVALIER, DESPORTES, DAZILLE, and DE GARDANNE.

"Even since the publication of the former editions of this work, several compilations, on West-Indian diseases, have appeared, in their transit to oblivion. Had they contained any thing new, it must have been the sublime effect of inspiration; for neither of them had four years incubation in the island of which they were said to be the offspring,—nor scarcely 'a local habitation or a name!'

"Without the advantages of long residence, great practice, and various opportunities for observation, a man of morality and reflection would abstain from promulgating opinions, where fatal consequences must attend adopting them. These advantages no person hitherto, Towne and Hillary excepted, ever had;—and all the infallible precepts I have seen, that have been published on West-Indian fevers, by English writers, since their time, are fortunately for mankind considered, by colonial practitioners, as cold northern productions, which cannot stand the climate of the torrid zone.

"It is also proper to rescue the profession in the West-Indies from the imputation which these medical *Buccaneers* have brought on it in Europe; for, wherever practitioners can be supposed to stand in need of such instructors, the state of physic must be considered as deplorable indeed.

"The resident practitioners in the West-Indies at present are people of more science, and of better education, than the practitioners in that part of the world were formerly; and to such of them as were my contemporaries, and have had many years experience, the prejudices I had to encounter when I first published my opinions, are well known: and though I have the satisfaction to learn, that the doctrines I have advanced have made a great change in the

treatment of diseases, yet I find there are some erroneous principles still retained, that ought to be eradicated;—and there is still a defect in not extending the antiphlogistic process sufficiently in the beginning of inflammatory diseases.

"The notions of asthenia and putridity so universally prevailed in Jamaica at the time of my arriving in the island, that the word *inflammatory*, as connected with fever, was scarcely known; and copious, or repeated bleeding, was in general considered as an agent of death.

"There had been violent contentions formerly on these points, particularly as referring to the yellow fever: but no person had ever defined that fever with accuracy; nor, before me, considered it as a genuine inflammatory disease.

"The two unfortunate physicians, Williams and Bennet, at Kingston, who terminated their disputes on this subject by killing each other in a duel, on the 29th of December, 1750, both adopted the opinion, that the yellow fever was a *bilious fever*, and gave it that appellation; and though Williams's intentions of cure were rational, yet it did not appear that he was able to distinguish this disease from others which are really bilious, and peculiar to that part of the world.

"This want of discrimination had always existed in the West-Indies; and the consequence was, that cardiacs and refrigerants, evacuants and bark, emetics and bleeding, frequently, and fatally, usurped the place of each other.

"Against these errors in particular, it is necessary to warn inexperienced and transient practitioners; and such in the navy and army, whose residence may not be long enough to acquire a thorough and competent knowledge of the endemics of those countries. They must be guided by books; the best of which, those who have been long in the habits of observing diseases are sensible fall far short of the design, and serve but as a guide to experience.

"*Barbadoes* has ever borne the palm of West-Indian medical literature: *Jamaica* is greatly in arrears, though it has long been numerously supplied with well-informed and judicious practitioners; among whom, Dr. Dwarris held a very distinguished place.

"That disciple of Boerhaave, through long and extensive experience, removed many errors which had been established there before his time, by the ignorant and illiterate, who had lawlessly assumed the profession.

"He also successfully opposed many inapplicable doc-

trines, which, imbibed in European schools, are often brought improperly into use in hot climates. This was of great advantage to those who practised with him; as well as to the patients, who frequently escaped the ill consequences of young doctors putting theory into practice.

"But while I lament that posterity can derive no benefit from knowledge that is not preserved by written tradition, I am sensible of the reluctance and discouragement which attend laborious literary pursuits in those sultry regions, *sub curru nimiùm propinqui solis.* The mind, enervated with the body, is roused to short-lived actions by efforts that cannot last, and sinks again under the oppression of climate, to which all things in nature yield.

"Hence arise great impediments to the advancement of medical art; and that knowledge which has been gathered through a long series of experience in those countries, generally dies with its possessor.

"This must ever be a subject of regret; for it is there that nature puts on all her variety of modes, and discloses many appearances, which are concealed in temperate climates. An observer there will often find in her rapid changes, many fallacious systems overthrown, that have been begotten in closets, by speculation, in other parts of the globe.

"Concerning what I have written, however it may be received as a contribution to the useful stock of medicinal knowledge, I shall at least be free from the charge of writing on diseases which I had not ample opportunities of knowing, during twelve years residence in the West-Indies; and of recommending a practice compiled from the authority of others, that I have never experienced myself. So far I can determine; but how I have written must be determined by others. It may be urged, perhaps, among many things, that I have treated with little complaisance the false lights of bad authorities. I wish it were in my power to extinguish them. They are injurious to mankind; and if it shall be found that I have increased the number, by adding to negligence and mis-conception in the midst of opportunity, the unprofitable toil of making my idleness and errors known to the world, time, I hope, will soon treat me in the same manner. For I disclaim all credit that may be acquired by adding to the miseries of sickness, the insolence of conjecture, and the treachery of hypothesis.

"I cannot dismiss the present subject, in which my views

have been principally directed to the avoidable, and to the remediable derangements of the body, without one solitary glance at those derangements of the mind, which no regimen can prevent, nor medicine cure.

" Hot climates administer certain death to a ' mind diseased ;' and where there is in the ' memory a rooted sorrow,' or ' written troubles of the brain.' The want of sleep in the slightest indisposition is always alarming ; and in the graver diseases, of people who have naturally much irritability of habit, or some grief, or anxiety in the mind, it is the cause of so great a determination of blood to the head, with excessive action of the arteries of the brain, and so much perturbation of the animal spirits, that often admit of no relief or composure, but what the unhappy sufferer, after violent convulsive struggles, phrenzy, and inflammation of the brain, finds in death.

" Sometimes indeed he escapes this fate, to experience the miserable alternative, of a long imbecility of the faculties of the mind.

" Therefore, let not the discontented in mind, nor the broken-hearted, hope to evade his cares and troubles, by changing to these climes ; nor think that any passion which has stormed the breast, will abate its force by distance.—*Nostalgia*,—that longing after home, exerts its painful influence in the remotest regions, and magnifies to danger the most trivial indisposition of either body or mind, when both are already half subdued by the heat and dread of climate. Those whose happy days have not yet been clouded with misfortunes, let them be careful here to preserve tranquillity of mind, and watch with caution over their passions.—The young and inexperienced, who have embarked with the false notion that fortune has heaped up treasure for them, to be delivered out gratis, let them also prepare for disappointment ; and let them avoid, at first arriving in these countries, entering into any serious engagement, or intricate concern, until they have made themselves acquainted with the genius of the people, and their local laws : for fear any glittering allurement should lead them into an inextricable labyrinth of difficulty and vexation, and consign them to that country ' from whose bourne no traveller returns.'

Dr. Moseley next employs himself in describing a West-India campaign. In general we know but too well their terrors and horrors, when undertaken by the *unseasoned* and *unassimilated* emigrants from the north. The present expe-

dition was undertaken by General Dalling, then Governor of Jamaica, against the Spanish settlements on the Isthmus of Darien. We might relate the particulars of this disastrous attempt, in our own language, but we believe it will be more acceptable to our readers to peruse it in the spirited and impressive words of the author. These will convey much instruction to the medical as well as the military officer. And if the temperate, peaceful, and unambitious character of our government and people, did not determine the citizens of our country to stay at home and avoid all aggression upon the territories of their neighbours, we would say, that this descent of the British upon the Spanish forts and settlements near the Lake of Nicaragua, afforded useful lessons to our statesmen, who might be disposed to embark in similar enterprises.

"The intent was to cut off the communication of the Spaniards, between their northern and southern American dominions, by *El Rio San Juan*, or, the *River Saint John*, as it is called by us, and the *Lake Nicaragua;* from the interior boundary of which to the South Sea is only four or five leagues, through a level country. Thus a connection from the northern to the southern Sea, was to have been kept up by us, a chain of posts established, and a communication opened, and protected, with an extensive coast, and all the richest provinces of South-America.

"Every person acquainted with the geography of the Spanish territories, of the defenceless state of this approach to them, and of the insurrections that then had actually taken place in *Santa Fé Popayan*, and many parts of *Peru*, formed the most sanguine expectations. Happy was every man who had hopes of bearing any part in the enterprise. Enthusiasm never was carried to greater height than by those who had promised to themselves the glory of shaking Spain to her foundation. The colours of England were, in their imagination, already even on the walls of *Lima*.

"*San Juan* river is the northern branch, or mouth of *Lake Nicaragua*, and is situated in north latitude 12° 0′, west longitude 83° 45′.

"The heat of the climate must necessarily be excessive; and this is augmented, in the course of the river, by high woods without sufficient intervals, in many places, to admit of being refreshed by the winds.

"The river has in its course many noisome marshes on its sides; and the trees are so thick as to intercept the rays of

the sun: consequently, the earth beneath their branches is covered with rotten leaves and putrid vegetables. Hence arise copious collections of foul vapours, which clog the atmosphere. These unite with large clouds, and precipitate in rains: the rains are no sooner over than the sun breaks forth, and shines with scorching heat. The surface of the ground, in places not covered with trees, is scarcely dry before the atmosphere is again loaded by another collection of clouds and exhalations, and the sun is again concealed.

"In the rainy seasons of the year, months successively pass away in this sort of vicissitude without the least diminution of heat, excepting at nights, when the air is poisoned by noxious, chilling dews. But sometimes during the *Periodical Rains*, which begin about the middle of April, and, with uncertain intervals of dry weather, end late in November, the torrents of water that fall, for weeks together, are prodigious, which give the river a tremendous aspect; and from their suddenness and impetuosity, cannot be imagined by an European to portend any thing but a deluge. This bursting of the waters above, and the raging of the river below, with the blackness of the nights, accompanied with horrible tempests of lightning and thunder, constitute a magnificent scene of terror, unknown but in the tropic world.

"These circumstances are not peculiar to this district, but are common to all the interior parts about *Carthagena*, *Porto Bello*, *Chagre*, the *Spanish Main*, and the *Musquito-Shore*.

"The amazing quantity of water that falls on the north and east sides of the *Cordelleras* and *Andes*, is evident from the immense rivers that empty themselves into the Northern Ocean, from the river *Amazon* to the river *Missisippi;* and the great dryness of the countries on the opposite side of those mountains is also evident, from the smallness of the rivers that empty themselves into the Southern Ocean.

"In the country of Peru, on the south of the Equator, though there are great fogs and thick mists, or *garuas*, as they are called, during their winter, which is from the end of June until the beginning of December, it never rains along the coast, within fifteen or twenty leagues of the sea.

"Of the little army destined for the *San Juan* expedition, after some delay at the mouth of the river, two hundred regulars, with ammunition and stores, proceeded up the river, with the Indians, in their several crafts. It being

now near the end of the dry season, the river contained very little water, and the shoals and sandy beaches rendered the passage difficult. The men were frequently obliged to quit their boats, and unite their strength in the water, to get them through some shallow channels. This labour continued for several days after they left the mouth of the river, until they arrived in deeper water:—then they made a quicker progress. However, they met with many obstacles by currents, and occasional rapids, or falls, which would have been insurmountable but for the skill of the Indians, in managing the boats on those occasions.

"On the 9th of April this advanced party arrived at a little island up the river, called *Saint Bartholomew*, which they took, after receiving a few shot from the enemy, by which two men were wounded. This island is situated about sixteen miles below *San Juan* castle; and was occupied by the Spaniards as a look-out, and defended by sixteen or eighteen men, in a small semi-circular battery, of nine or ten swivels. It was necessary for our purposes, as it commands the navigation of the river, in a rapid and difficult part of it.

"On the 11th of April the troops arrived before the castle of *San Juan*, and on the 13th the siege commenced. The ammunition and stores were landed two or three miles below the castle, and transported through the back woods to the place where the attack began.

"*San Juan* castle is situated sixty-nine miles up the river, from the mouth, and thirty-two from the *Lake* of *Nicaragua*; and is a navigation of nine days: but for loaded boats much longer from the harbour up to it. The return from it, down by the current, is made in a day and an half.

"On the 24th of April the castle surrendered. During the siege two or three men were killed, and nine or ten wounded.

"From the unfortunate delay before the castle, which surrendered when it was summoned, the season for the Spring periodical rains, with their concomitant diseases, was now advanced; and the little army had lost the opportunity of pushing rapidly on, out of those horrid woods, by which they were environed, to the dry, pleasant, and healthful plains and agreeable towns of *Grenada* and *Leon*, near the Lake, in the province of Nicaragua, which from its salubrity and situation is justly termed by the Spaniards, *Mahomet's Paradise;* and where they might have main-

tained themselves, with the reinforcement which followed them from Jamaica on the 10th of April, until a road for carriages might have been made from Blue-fields' harbour to the Lake, and the seasons would have permitted further reinforcement, for the completion of a glorious enterprise; as the natives of the country were ready to revolt, and only waited but for a prospect of success. But here they were shut up in the castle, as soon as they were in possession of it. The troops and Indians were attacked with fluxes and intermittents, and in want of almost every necessary; for the river was become so swoln and rapid by the rains, that the navigation from the harbour, where the provisions and stores were, was tedious and almost impracticable. Here the troops, deserted by those Indians who had not already perished, languished in extreme misery, and gradually mouldered away, until there was not sufficient strength alive to attend the sick nor to bury the dead.

"Thus reduced, in the month of September they were obliged to abandon their flattering conquest, and return to the harbour; leaving a few men behind who were the most likely to live, to keep possession of the castle, if possible, until further orders should be received from Jamaica.

"The Spaniards retook the castle as soon as the season permitted, and, with it those who had not strength enough to make their escape.

"The crews of the vessels and transports that convoyed and carried the troops, suffered considerably by diseases which the season produced, while lying on the coast; and a thousand seamen lost their lives.

"Of about eighteen hundred people who were sent to different posts, at different embarkations, to connect and form the various dependencies of this expedition, few of the Europeans retained their health above sixteen days, and not more than three hundred and eighty ever returned; and those chiefly in a miserable condition. It was otherwise with the negroes who were employed on this occasion. Few of them were ill; and the remainder returned to Jamaica in as good health as they went from it.*

"The survivors of the party, after they left *San Juan*

"* It was the same at the taking of *Fort Omoa* from the Spaniards. On that expedition half of the Europeans who landed died in six weeks. But very few negroes; and not one of two hundred that were *African* born. The *Creole* negroes did not bear hardships so well."

castle, embarked for *Blue-fields*, an English settlement about sixty miles to the north of *San Juan* river, where most of them died.

"The climate of *San Juan* was not more destructive to the human frame than the harbour was to the ships: and for the benefit of future naval operations I think it is important to mention here, that there is an absolute necessity for having every vessel copper-bottomed employed on that coast; especially when there is a probability of detention: For, in our expedition, the bottoms of the ships, not being coppered, which went with the first equipment from Jamaica, were in a short time so entirely eaten by the worms as to become useless; and had not fresh ships been dispatched from Jamaica, the remains of the troops must have perished there, for want of transports to bring them away.

"Captain Nelson was the person who commanded the Hinchinbrooke man of war, the convoy to the expedition. On his authority I state, that the fever which destroyed the crews of the different vessels, invariably attacked them from about twenty to thirty days after their arrival in the harbour; that in his own ship, of two hundred men, eighty-seven were seized and confined to their beds in one night; that one hundred and forty-five were buried there; and that not more than ten survived the expedition.

"Great as our inconveniences were who remained in Jamaica, they who encountered the *San Juan* expedition suffered much more; and it was long doubtful whether such of them as experienced every hardship in life, and were thrown into the river, or lay unburied on its banks, a prey to wild beasts, in sight of their helpless companions, were not in a more enviable state than the survivors.

"Those who returned to Jamaica were harassed with obstinate intermittents, or diarrhœal, or dysenterical complaints, or with painful enlargements of the liver, or spleen. Their complexions were yellow, and their bodies emaciated. Some whom I attended, after their return, that had been long ill on the Spanish Main, had their intellects impaired, and their senses at times disordered, during their weak and convalescent state.

"The late Doctor Charles Irving, who was on the Spanish Main, to command a corps of Indians, which he was raising for that service, was a skilful physician.—He informed me, that in the intermittents, the *delirium*, which commonly came on in the paroxysm of the fever, after a few

returns of it, sometimes remained during the intermissions, which soon became irregular, from reduplications of the accessions; and that several men wandered about in a phrenzy, and died raving mad.

"Imbecility of mind, as well as of body, is a common consequence of long and obstinate disorders in hot climates; and I have frequently observed that the mind has been greatly impaired after irregular and harassing intermittents; and sometimes a temporary insanity has ensued. This must have been also observed by others; but as far as I know, no person except Sydenham, who was the first that noticed it, has mentioned it as occurring in practice. He says, he has often found, when the patients had been extremely debilitated by long continuance of the disease, the doubling of the fits, and repeated evacuations, that they have been seized with a madness, when they began to recover, which went off proportionably as they gathered strength; but that sometimes, from injudicious evacuations only, it has degenerated into a miserable kind of folly for life.

"But there is another cause of these disorders of the brain in the West-Indies, which neither injudicious evacuations, nor climate, nor the nature of the disease, are in the least accessary in producing; though generally attributed to them. This cause is the *Peruvian bark.*

"Bark, in unskilful hands, is a precarious remedy even in intermittents in the West-Indies, and should never be long persisted in, without evidently good effects: and then not without the frequent intervention of calomel."

ART. 2. *Narrative of a Voyage to Brazil, &c. with general Sketches of the Country, its Natural Productions, Colonial Inhabitants; and a Description of the City and Provinces of St. Salvadore and Porto Seguro. By Thomas Lindley. London. Johnson.* 8vo. p. 298. 1805.

WHEN the news of peace between Great-Britain and France reached the Cape of Good-Hope, in December, 1801, there was considerable alarm among the English merchants at that place, on account of an expected fall in the price of their goods. The Dutch refused to purchase under an expectation that they could purchase the merchandise for a trifle on the evacuation of that territory by the British, pursuant to the treaty.

To avoid the inconvenience and loss incidental to such a condition of things, the writer of the present narrative, then a merchant there, employed himself, as many other men of the same occupation did, in selecting other markets, and dispatching vessels thither with their merchandise. Some went to Mauritius, some to the River Plate, and Mr. Lindley sailed for St. Helena; after a stay of about three weeks there, he was obliged, by bad weather, to bear away for Bahia, or St. Salvadore, in Brazil. Hence he went to Porto Seguro. Here he entered into some overtures with the Governor and his two sons for a little contraband trade, intending to exchange the goods on board for Brazil-wood of the province. As however the project was likely to be found out, and serious consequences to ensue, the smuggling was for the present abandoned. Mr. L. relates that then he was about to leave the coast, but was prevented by the persecution of misfortune. As he had put into Bahia to repair the damage done to his brig by a squall, and had entered Porto Seguro to wait for better weather, and had been detained there longer than he expected to repair her rudder; so next he was obliged to cast anchor in the river of Carevellos, to undergo a complete repair of her counter. But it seems that the evils of a tempestuous sea and a lee-shore were not enough for our adventurer: For while he was innocently repairing his vessel, and endeavouring to effect his departure from such an unlucky coast, behold an order was brought by an officer and a file of soldiers for the arrest of Mr. L. and his crew, for the seizure of the brig, and for the removal of them all to Porto Seguro. It seems that the intention entertained by the Governor and our author to barter some Brazil-wood for commodities from the Cape of Good-Hope, had been made a subject of public information by some enemy to such illicit intercourse, as injurious to the revenue and interests of her most Faithful Majesty. In consequence of which ill-natured act, and of some other charges, an inquiry took place, which, after a tedious imprisonment of Mr. L. and an arrest of the Governor and his sons, terminated in an allowance of so much liberty to Mr. L. that he ran away, and made his escape to Oporto. And although he went to Lisbon and remonstrated with the Portuguese government, yet the determination of that Court was, that neither restitution nor recompense should be made for the brig and cargo. Having suffered such losses and disappointments, our adventurer has published a book, which

may be viewed, however, as something more than a detailed narrative or appeal to the public, since it contains some valuable geographical information concerning the ports of Portuguese America, which he visited in 1802 and 1803.

Porto Seguro lies in latitude 16° 40′ S. and longitude 40° 12′ W. and from the author's description (see p. 213,) we make the following instructive extracts:

"Porto Seguro is formed by a reef (or rather ledge) of rocks, that run from an extended point of the main, about a mile out, in a direction parallel to the land,—forming a natural mole. These rocks are dry at low water, and terminate abruptly; appearing again faintly at half a mile distance: the space between is the bar, or entrance; over which is twenty feet water at high tides, but inside it shallows to twelve feet. This last is the average water of the port, except at some distance up, where a river empties itself, and the water is somewhat deeper. The bottom is a fine sand, gradually ascending to a broad beach.

"The captainship or province of Porto Seguro extends on the north to the river Grande, where it meets the province of the Isles *(des Ilheos)*, the bank on each side bounding the respective districts. This river is yet unexplored, and even near its mouth is but thinly inhabited, as it furnishes over its bar at high tide but two fathom water. Immense woods ranging along the coast each way, crowd its banks; and the trees of which they are formed are considered as the best for ship-building in Brazil. It is from thence, and Patipe adjoining, that the king's yards are supplied with timber. The trees chiefly used are the sippipira, peroba, araubu, and louro. The first resembles the teak of India; the others, species of oak and larch. Putumuju, angelim, and cedar, are used for deck planks; piquosa and peroba are a lighter wood, and similar to fir in working. There are besides these jackaranda (or rosewood), Brazil, log, and camwood; mahogany, campeachy, and a variety of others.

"The river Grande, after ascending the country to a considerable distance westward, turns to the south, and is supposed to have its source beyond the mines of Pitangui, but has never yet been investigated so far. It is broad and deep at its mouth within the bar, and continues so to some distance above it, classing in magnitude amongst the secondary rivers which flow through this immense continent.

"For fifteen days the expedition I have mentioned in the introduction proceeded up the river in canoes, uninter-

rupted by falls or rapids, and without obstruction of any kind to their navigation, within that period. They found its banks incalculably rich in natural productions, and abounding with articles of food; the woods with wild hogs, and savannas with cattle, &c. At the termination of their voyage, at a small distance from the river, were diamonds lying on the surface of the earth; but, according to their account, of small size and value. They found also topazes, amethysts, and emeralds; and they meditated a second excursion, but were prevented from carrying it into effect. In fine, the river Grande (of Porto Seguro*) wants encouragement only to become a great national benefit; though probably it is the policy of the Portuguese government to let it remain unknown and unpeopled.

"Passing the coast to the south from the river Grande, we come to Belmont, a new and thriving settlement; and at some distance further are the town and district of Santa Cruz. The harbour admits vessels of twelve feet, and the Coroa Vermeil immediately adjoining, to the southward, ships of any burthen: the town is decayed and inconsiderable. Five leagues further, still coasting, is Porto Seguro; to the south of which, beyond the chapel of Nossa Senhora de Juda, the small shallow bay of Tranquoso indents the shore. There are several plantations here, and the country is delightful.

"The Rio des Fratres is not far distant; but the mouth of this river being completely choaked up with a bar, it has not even a solitary plantation on its banks. The country to the south of the Rio des Fratres is mountainous: Monte Pascoa rears its circular white head, and is conspicuous to a great distance, serving as a pilot-mark in the dangerous navigation to the river Carevellos, for the whole coast here is a continuation of reefs, sunken rocks, and shallows; yet the neighbouring pilots conduct vessels so skilfully through, that few accidents are known.

"From the Rio des Fratres to Villa Prado is a long range of neglected coast, intersected by several smaller rivers, and frequented by such numbers of hostile Indians, that travelling on the beach is extremely dangerous, and never attempted without a guard. Prado is a thriving fishing town, and Alcoabass still more flourishing; the inhabitants

"* There are several rivers of the name of Grande on the east coast of South-America.

of the neighbourhood employing their whole industry in the culture and preparation of farinha, which they carry to the port of Carevellos. The river Carevellos* has a formidable and dangerous bar, that will admit vessels of twelve feet only; but when over the bar they have ten fathom water. The river is two miles broad, and proportionally deep; and for six miles that it ascends to the town, its banks are beautifully interspersed with plantations. The town is bustling and populous; the buildings are somewhat superior to those of Porto Seguro, though in the same style; but the church has a mean and most miserable appearance. The country around is well cultivated with plantations of mandiock; this being the principal mart of farinha for the coast, and the place from which Rio Janeiro, Bahia, and Pernambucco, are chiefly supplied. A considerable number of sumacks, barks, and launches, belong to this port, which are built there, not only for its own use, but for that also of Porto Seguro.

"Ten leagues to the southward of Carevellos is San Matthias, the final boundary of the captainship in this direction, and there likewise mandiock is planted.

"Through the whole extent of the provinces agues are extremely prevalent, and far more afflicting and dangerous than with us; few Europeans escape its attack: as you proceed to the southward, the disorder increases in force; and at the last-mentioned place is so fatal, that it generally becomes the grave of those strangers who visit it.

"The coast of the province extends to a distance of seventy leagues, and to the westward is without confines; yet the present settlements in that direction do not reach ten leagues from the sea, notwithstanding the interior is known to contain gold, and to abound in other valuable minerals: for in addition to what has been noticed of Rio Grande, it may be observed, that Lewis Brito de Almeida, governor-general, in the year 1570,† received from some converted Indians information of this fact, which he was ordered by the court of Lisbon to investigate; and mineralogists being sent out to him for the expedition, they proceeded up the river Doce,‡ entered a branch of it, called the Mandi, and

"* Or *of ships*; Carevellos being an ancient name for three-mast vessels.

"† Histoire d'Amerique.

"‡ Which adjoins San Matthias, and discharges itself in the province of Espirito Santo.

disembarking here, travelled westward till they came to an immense lake, called by the Indians the mouth of the sea: passing this lake, they reached the river Accesi, and having ascended it, arrived at length at the spot, whence they brought away very valuable samples of emeralds, sapphires, topazes, and crystals; but so little attention was at that period, or has since been, paid to the circumstance, that the place itself, and the marks by which to find it, have been lost.

"The inhabitants of Porto Seguro plume themselves on the circumstance of theirs being the immediate spot where Brazil was first discovered by Pedro Alvares Cabral; and they still preserve with great veneration the holy cross, that was erected under a spreading tree at the first high mass, with music, discharge of ordnance, &c. during which the Indians, they say, flocked in crowds at a sight so novel, and continued in profound silence, absorbed in amazement and curiosity; and that 'the divine Spirit so visibly manifested itself, that the natives, at the moment, were converted to the holy faith.' Alvares denominated the new-found country, after this cross, Santa Cruz; but the name was afterwards altered by king Emanuel to that of Brazil, from the tree ibiripitanga, producing a rich glowing red,* which was then a great novelty, and since of considerable value in Europe."

Bahia, All Saints Bay, or Saint Salvadore, is situated in 13° 0′ S. and longitude 39° 25′ W. Of this province Mr. L. also gives a description at some length, with an historical sketch from its discovery and settlement in the beginning of the sixteenth century up to the present time. From this we make the following extract.

"The bay or gulph of All Saints is entered from the south, and is formed by a large peninsula of the main and the island Itaporica, extending north-westward among distant islands, and a branching inland sea, a complete degree in extent, and which receives the tribute of six large rivers, Paraguassu, Serzipe, Jaguaripe, Matuim, Paranamerim, and Paraga, all mostly navigable.

"The bay, properly so called, is three leagues broad at its mouth, twelve in diameter, and thirty-six in circumference, without including the islands or more remote parts of it.

"From the bar off Fort St. Antonio, the extremity of

"* Brasas, or Brazas; a glowing fire or coal.

the large peninsula, to the point of Montserrat (a small peninsula, within the other), and the beach of Tarpagippe, is the part immediately used for anchorage; where vessels are sheltered from every wind in clear ground, and have a space in which the united shipping of the earth might rendezvous without confusion.

"Viewing this still and capacious lake, as it may be termed, surrounded with a country exuberantly rich in its produce, whether for the use or superfluities of man, and situated nearly in the centre of the habitable globe, it seems as if formed by nature for the emporium of the universe.

"Bahia is on the right side of the bay, where the land at a small distance from the shore rises steeply to a high ridgy hill, on the summit of which the city is erected, with the exception of a single street that ranges parallel to the beach: from the inequality of the ground and the plantations interspersed, it occupies a considerable space. The buildings are chiefly of the seventeenth century, ill constructed, and from the slightness of the materials rapidly decaying, which diminishes the effect of many of them that once were sumptuous.

"Bahia carries on a very considerable commerce, from its superior local advantages, rather than the industry of the inhabitants. The chief trade is directly with Lisbon and Oporto, in which about fifty large vessels are employed, that perform their voyages with great dispatch. These vessels supply the colony with European and Indian manufactures, as well as wine, flour, bacalhao, butter, Dutch cheese, salt, and other commodities; and receive in return cotton, sugar, aqua ardent,* coffee, tobacco, lignumvitæ, mahogany, satin and tulip woods, a variety of gums, balsams, and medicinal roots; giving a considerable balance of profit in favour of Lisbon. The Bahians have permission to import their own slaves, and to bring in the same vessels different African articles, such as wax and gold dust, which they obtain in exchange for coarse printed cottons,† aqua ardent, and tobacco. The price of a slave in Bahia is about thirty pounds sterling.

"The distant colonial or home trade of the Bahians is likewise considerable and extensive; and that to the southern,

"* A spirituous distillation from cane juice and molasses, but different in flavour from rum.

"† Chiefly of Lisbon manufacture.

Rio Grande in particular, very lucrative, considering the indolent and desultory manner in which it is conducted. About forty vessels, of two hundred and fifty tons each, are engaged in it; which scarcely complete their voyages in two years, though the distance is only twenty degrees to the southward. They take with them from Bahia a trifling quantity of rum, sugar, earthenware, and European goods (chiefly British and German), which they dispose of for the greatest part, the salt excepted, in a contraband traffic with the Spaniards of Maldonado and Montevideo, for silver. During this traffic the crews are employed in loading with jerk beef and hides, prepared from the fine cattle that abound in the savannas adjoining Paraguay. After slaughtering these animals, they cut the flesh into thin pieces, about two feet in length, which they salt, and dry in the sun and smoking houses; and they cure the hides at the same time.

"The ships, as they arrive at Bahia, sell the beef on board by retail, at two vintins (2¾d sterling) a pound. It is purchased principally by the lower class of inhabitants, and for the use of slaves and shipping. By disposing in this manner of a cargo, instead of landing it, a vessel is detained five months in port, and sometimes longer; so that in the period which one voyage takes, reckoning the idle time lost at Rio Grande, three might be made.

"The trade carried on in the immediate confines of the bay, of which a great part is inland, is astonishing. There are full eight hundred launches and sumacks of different sizes, daily bringing their tribute of commerce to the capital: tobacco, cotton, and various drugs, from Cachoeira; the greatest assortment of common earthenware from Iaguaripe; rum and whale-oil from Itaporica; timber from the province of the Ilheos; farinha and salt fish from Porto Seguro; cotton and maize from the rivers Real and San Francisco; and sugar, fire-wood, and vegetables, from all quarters. A degree of wealth, unknown in Europe, is thus put in circulation, and would be considerably increased, if even the supine nation who at present enjoy the country were left to their free exertions; but their trade is slavishly fettered by the severest regulations. Bahia, as well as Pernambucco, has a staple for cotton; and on the importation of this article, in the launches and sumacks, the whole is landed at a ware-house appointed for the purpose, where it is weighed, sorted, and pressed; its quality, first, second, or inferior, marked on the bales; and then it is ready for

exportation. In this general store it continues till disposed of by the owner, at the prices commonly fixed by the staplers. The aqua ardent is in the hands of an exclusive company, to whom every pipe that does not pass through its ware-houses pays a duty, increasing it to the price at which the company sell. Tobacco, Brazil-wood, bullion, and the precious minerals, as I have already mentioned, are disposed of by government alone. Foreigners are expressly forbidden every species of trade, and are not even allowed to ship colonial produce in Portuguese bottoms. In short, the prohibitions and monopolies are so many, that commerce is contracted in its operations, industry debilitated, and smuggling encouraged: for men in all countries are too ready to engage in what is forbidden, losing sight of the risk, in the delusive prospect of superior profits.

"The province of Bahia comprises fifty leagues of coast, chiefly in the environs of the bay, and a small slip to the northward adjoining. Though one of the smallest divisions of Brazil, it is the most fertile, populous, and luxuriant, yielding invaluable riches.

"The chief town is Cachoeira, fourteen leagues from Bahia, most delightfully situated on the banks of a small river, and the mart for the northern gold-mines and the produce of the surrounding cultivated interior. A seminary, called Belem,* was established near this town by the Jesuits, for the instruction of youth, both colonists and Indians, on the most liberal principles; but it has declined with the extinction of the order.

"Jagoaripe, Amoro Jacobina, Do Sitio, and San Francisco, are all bustling towns of the province; to which the valuable islands of Itaporica and St. Paul's also belong."

To our readers it may be pleasing intelligence to learn that Mr. L. though not bred to medicine, on being known to have a medicine-chest on board his vessel, was immediately taken to be a physician; and as he was a foreigner, the Brazilians rated his skill extravagantly high. He accordingly commenced doctor, and found that his reputed professional knowledge gave him no small share of importance, and alleviated in some degree the rigour of his captivity. And it is indeed no indifferent recommendation of the healing art, that the miseries of imprisonment may be sometimes mitigated in favour of gentlemen of the faculty.

"* Or Bethlehem.

ART. 4. *Papers on Agriculture; consisting of Communications made to the Massachusetts Society for promoting Agriculture. Published by order of the Trustees. Boston. Young and Minns.* 8vo. p. 111. 1804.

FORMERLY (Med. Repos. Hex. ii. vol. i. p. 39) we gave an account of a respectable publication under this title. And we now give a welcome reception to a second collection of essays from the same quarter. Though we must observe that so slowly do the printed works travel from one part of the United States to another, that this performance, which came forth from the press a year ago, but lately reached us. So long indeed has it been in coming, that the time for almost all prize-questions and premiums had elapsed before our review was written. We therefore do not mention them at large, as we did before, because it would be but an *ex postfacto* business. But we acknowledge our regret, that at New-York the publications of Great-Britain and France frequently reach us with greater regularity and speed than those of our neighbouring Commonwealths. This inconvenience we hope will be removed by more frequent correspondence among the *literati*, by increasing intercourse among merchants, and the more regular understanding which exists among booksellers.

We observe that Governor Strong continues to be the President, and Messrs. Russel and Dexter the Vice-Presidents; in like manner Mr. Winthrop is still their Treasurer, Mr. Avery their Recording Secretary, and Messrs. Gore, Brimmer, Cabot, Lyman, Warren, and Pomeroy are their Trustees. The Rev. Dr. J. T. Kirkland is the Corresponding Secretary.

The principal pieces contained in the collection are the following: 1. *Particulars concerning the History and Use of Plaster of Paris; more especially as it concerns Agriculture.* The author of this is a member of the Kennebec Agricultural Society; and he has given a sensible and encouraging account of the effects of gypsum in promoting the growth of plants. It must be agreeable intelligence to farmers, that certain experiments in England and our own country countenance the hope that sulphate of lime may yet prove a valuable manure in maritime situations.—2. *Answers to the Queries proposed by the British Board of Agriculture in* 1795, *concerning the Culture of Potatoes.* The writer is

Dr. James Anderson, and the Massachusetts Society have thought his Replies worthy of republication. Mr. A. concludes, that cutting potatoes for planting is always of doubtful advantage, and dividing into small pieces injures the crop; the best and largest potatoes ought to be reserved for planting; the roots for that purpose ought to be all of one kind; deep-holing hurts the crop, and esculent quality of the potatoe; a greater quantity ought to be planted on a given space than is usually done, to the amount of twenty-five bushels to the acre of the *best* land; manures of a quality to keep the earth light as well as enrich it, are necessary; and potatoes ought not to be exposed to the sun when dug from the earth, as they acquire therefrom a bad taste, and probably an unhealthy quality. The reader who desires to know the details of Mr. A.'s experiments on raising potatoes *from the seed*, and of profiting fully from his trials, would do well to peruse this instructive Memoir. 3. *Then follow Mr. Knight's Observations on the Grafting of Trees.* He inculcates the idea of the diseases of the parent-trees being perpetuated in grafts. He found *Moss and Canker* to invade the *young* trees which had been grafted with cuttings from *old* stocks. And he became convinced that the true way to rear good orchards, is to begin by raising young trees from the seeds, instead of taking grafts from decaying trees, or worn-out varieties of fruit. This is a very important view of the subject; and this short paper is highly worthy of perusal by every gardener, farmer and nursery-man. 4. *A Letter from Noah Webster, Esq. to the Editors of the Connecticut Courant, chiefly on the Cultivation of Fruit-Trees, rearing the best Fruits, and preserving Apples during the Winter.* This contains a number of practical remarks, which merit the attention of those who attend to those objects of rural economy. 5. *Next follows a Communication* (from the same person who wrote the treatise on gypsum before-mentioned, and whom we suppose to be the same Mr. Vaughan of whom we wrote in terms of respect and commendation in our former review) *to D. Foster, Esq. respecting the Methods in Use for forming Dwarf-Fruit-Trees, with some detailed Particulars respecting Fruit-Trees in general; and Observations on the supposed Decline and Extinction of certain Fruits.* Herein are contained, besides the sentiments and directions of the author as to the forming of dwarfs, many valuable extracts from, and allusions to the writings of Bucknall, Hitt, Forsyth, Duhamel, Miller, Hunter, Bonnet, Speechly, Senne-

bier, Rozier, Lawrence, Buffon, Sharrock, Lawson, Cooper, Ressons, Peck, and several other well-informed observers. This disquisition, which alone occupies about half the volume, comprehends much of what is known on several of the matters about which it treats. It may be considered as a valuable compendium of this branch of agricultural knowledge. The industrious researches of the writer have brought into a compact form and moderate compass, the information that has heretofore lain scattered through many heads and volumes. The proprietors and improvers of landed estates in the United States, have therefore cause to thank him for the pains he has taken to digest and methodise the materials. For herein they may find the method of making dwarfs, their advantages and disadvantages, the modes of trimming them into *cylindrical* and *concave* forms, followed by the English, French and Chinese gardeners; with a great variety of information concerning *cuttings* and *layers*, *stools* and *scions*, *buds* and *eyes*, *stocks* and *grafts*. These are too minute for us conveniently to analize. We therefore refer our readers to the original works, which will amply reward them for their trouble.

He declares that young stocks and scions of almost every sort of friut-tree suited to the soil of the United States may be imported from Europe; orchards may be ploughed, in situations where the soil is not thereby rendered easy to be carried off by rains. The quincunx arrangement of trees saves an eighth of the ground more than the common square form. However, for the special remarks on these points, and on the pruning of trees, their diseases, remedies, and various other interesting circumstances, the curious inquirer must, we repeat, resort to the learned dissertation itself.

6. Mr. *Enoch Perley's Paper on the Insects (Lice) which infest many young Apple-Trees in Maine.* 7, 8, 9, and 10, *are short Recitals of Experiments made by Messrs. Pomeroy, Derby, and two other Persons, to cure Clover with Salt for the Fodder of Cattle.* Two of these trials were unsuccessful, and the clover spoiled; and in two other cases it was preserved, after sea-salt in quantities from one to three pecks the load was sprinkled on it. What advantage will accrue from this we do not know. 11. *A Sketch of a Market-Register or Calendar of Flora between June and September*, 1802, concludes this work. The design is good; but it wants enlargement, repetition, and continuance to make it useful.

ART. 4. *A Popular Treatise; containing Observations concerning the Origin of Yellow Fever; together with Practical Rules of Conduct for preventing that Disease, and the best Methods of nursing Fever-Patients. By Jacob Vredenburgh Brower, M. D. Forman*, pp. 99. *New-York.* 1805.

THE subject of this pamphlet, according to the purport of the title-page, is discussed under three heads. In the first part the author enumerates such causes of disease as he supposes to exist in the city of New-York; in the second part he lays down such practical rules of conduct as experience has approved in preventing the attack of fevers; and the third part exhibits the mode of nursing the sick. Under all these heads many judicious and useful observations are delivered, which afford sufficient proof that the author has exercised much diligence and attention in the prosecution of his inquiries.

Dr. B. ascribes the origin of yellow fever to the operation of heat, of moisture, and of confined air, followed by sudden transitions of temperature. He justly rejects the agency of contagion in producing this disease, and offers some of the numerous and cogent arguments which have been often employed to prove the non-existence of such a principle in relation to yellow fever. It excites our surprise, however, to find Dr. B. likewise disposed to reject the agency of miasmata in the production of this species of pestilence. This is a bolder step towards innovation on this subject than any which has lately come under our notice; and at the same time must be pronounced incapable of receiving support or vindication from the facts or any legitimate reasoning. Heat, moisture, confined air, and sudden transitions of temperature are all compatible with the preservation of health, provided the confinement of the air be not carried so far, or continued so long, as either to impede the function of respiration, or to accumulate the exhalations of putrefaction. A voyage within the tropics affords a satisfactory example of this fact. Here will be found the heat, the moisture, and the confined air, often accompanied with sudden transitions of temperature. Yet it is observed that the air on the ocean, even under all these circumstances, is singularly healthful, if sufficient pains be taken to preserve cleanliness on board of the vessel. The voyages of Capt. Cook and of many others engaged in enterprises of circum-

navigation, discovery, or commerce, afford ample proof of this assertion. Heat and moisture may be combined to a very high degree, and still remain entirely harmless. But when these agents, especially in high degree, operate upon decayed animal and vegetable matter, a deleterious principle or poison is produced, which in certain states of concentration and virulence, becomes a most destructive source of disease. So many observations have been made by so many different persons, in so many different regions of the globe, and through a lapse of so many ages, all concurring in the same conclusion, that it is no longer possible to doubt the existence of miasmata thus generated, or that they are a very frequent cause of disease. The greater noxiousness of these miasmata in cities arises, in the first place, from the vast collections of corrupting animal and vegetable substances, far exceeding any degree of such collections that can usually take place in the country; and, secondly, from the higher temperature of the air in cities, produced by the accumulation of heat, and the reflection of it from the materials of which houses are built and streets paved.

A moment's reflection on some very familiar facts will convince every body of the necessity of admitting the existence and pernicious operation of this deleterious principle in the atmosphere, especially in our cities, and particularly in certain parts of them. It has frequently happened both in New-York and Philadelphia, that persons coming from healthy districts of the country to those cities, during the prevalence of a pestilential epidemic, have ventured to breathe the air of the lower streets for an hour or two; and then returning home, without having been near any sick person, in a few days have been seized with the most malignant degree of yellow fever, and have speedily died. This has happened so often, and with such pointed circumstances, as to leave no doubt that breathing the air of our city at such times, even for a few minutes, may, in persons unassimilated to it, give occasion to this pernicious vapour floating in the atmosphere, to exert its baneful influence. We may likewise clearly observe the operation of this local atmospheric poison in considering the comparative states of the air in New-York and Brooklyn,* during the prevalence of a pestilential epidemic. Brooklyn, on such occasions, has as much *heat*, as much *moisture*, as much *confined air* (being at

* A village on Long-Island, opposite and within view of New-York.

such times extremely crowded with inhabitants), and experiences as *sudden vicissitudes of temperature* as New-York; yet such is the difference in the force of miasmata, owing to the causes already mentioned, that, in the former place a mild remittent only shall prevail, while the latter is ravaged by malignant fever. A similar difference also may be observed between the village of Greenwich and New-York.

Some have contended that the noxious power in question, instead of being a poison infused into particular portions of the atmosphere, consists merely in the abstraction of the vital part of it to a certain degree. Whether Dr. B. in rejecting the former, has adopted the latter of these opinions, we cannot distinctly perceive.

Dr. B. seems to have been led away from the consideration of the *primary cause* of these diseases by a too close and exclusive attention to the operation of *secondary or exciting causes*. These different causes are so far, however, from being inconsistent, that they throw light on one another. Excessive heat, cold, fatigue, intemperance, &c. do really bring on the disease, but only in such persons as previously had imbibed the miasmata of putrefaction. Many persons are subjected for a long time to the influence of those miasmata without falling sick; but it is after exposure to these miasmata that the exciting causes just enumerated produce the greatest effect. And while the superficial observer regards only the operation of the latter, the more comprehensive one will examine further, and discover that the predisposing influence of the former had been essential to the production of the effect.

While we thus offer our remarks on what we consider as mistakes and omissions in the treatment of this subject, we acknowledge with pleasure that the author has rendered an acceptable service to the public in laying this pamphlet before them; and we hope he will hereafter continue to devote his attention to the subject with all the zeal which its importance demands.

ART. 5. *Esquisse de la Situation Politique et Civile de la Louisiane, depuis le* 30 *Novembre*, 1803, *jusqu'au* 1^er^ *d'Octobre*, 1804. *Par un Louisianais. A la Nouvelle-Orleans. Beleurgey et Renard.* 8vo. p. 46: *That is, a Sketch of the Political and Civil Situation of Louisiana, from the* 30*th November*, 1803, *to the* 1*st October*, 1804. *By a Louisianian.*

GRIEVANCES and sufferings fill almost all the pages of this pamphlet. With these we consider it foreign from our purpose to meddle. But we notice the publication because the printing is pretty well executed, and for the sake of expressing our regret, that the writer, who seems to be duly sensible of the importance of the *Agriculture* and *Commerce* of Louisiana, (Avant propos. p. 3) has *not* vouchsafed to give his readers any information concerning them.

MEDICAL & PHILOSOPHICAL NEWS.

DOMESTIC.

Pestilence.

IN our last number we ventured to express apprehensions of an impending pestilential epidemic, which in the progress of the season were but too well verified. We were not unaware how offensive such a prediction must be to all that class of the community who can only believe in the foreign production and importation of this disease, and who, of consequence, will not notice any indications in the state of the weather or in the aspect of our diseases, which may be considered as the premonitory signs of pestilence. To all such persons, however, we take the liberty to suggest, that much risk of professional reputation may be avoided, and much solid benefit rendered to the public by attending to these indications. If it be desirable to foresee the probability of a rigorous winter, in order to prepare the requisite quantity of fuel and other necessaries of life, it is certainly more important to be in readiness to meet the calamities of pestilence, or, if flight be preferred, to make a timely retreat. The uncertain and conjectural nature of medical principles is incessantly lamented; there is indeed too much ground for the lamentation; but still to the eye of the attentive observer objects are presented every day which may be safely laid down as the basis of firm conclusions.

We claim very little credit for the notice of approaching sickness which we conceived it to be our duty to offer to our readers. There was nothing mysterious or hidden in the nature of the materials on which we undertook to found this judgment. We held in our possession only such data as were equally within the reach of every body else. After a careful comparison of the season with such as had gone before, and a cautious inquiry into the origin and character of the diseases which had occurred in several cities of our country, and especially those in the city of New-York, we concluded, unless the current season should differ in its results from all preceding similar ones, and unless the diseases which recently had appeared, and were then existing, should be found to bear no relation to such as were to follow

them in the more advanced periods of the season, that malignant fevers must be expected to be epidemic.

History of the Disease.

The month of August produced a continuance of the same high heat which had distinguished that of July. It very seldom happens that heat and drought proceed to such extent as they did in those two months. The grass was generally burnt up, the appearance of the fields was arid and naked, and the maiz, buck-wheat, potatoes, and other crops then growing were nearly ruined.

While the weather remained so warm and dry, the number of cases of malignant fever did not rapidly increase. It was indeed surprising to observe the gradual manner in which they proceeded to become more numerous and acquire more malignity. The first case that occurred, that of *Daniel Wright*, in Roosevelt-street, which was noticed in our last number, deserves on this account especial recollection. The whole series of cases afterwards, till the disease became epidemic, afforded a striking commentary on the character of this man's illness. Several occurred in July and August, exactly similar, which, after the termination of the febrile symptoms, assumed a chronic appearance, and produced a tedious confinement.

The season of great heat and drought, with the occurrence of cases of malignant fever every few days, continued till the 28th of August, when there was a moderate fall of rain, which soon revived the appearance of vegetation. But the effects of this moisture on the health of the city, after so long a course of heat, were immediately pernicious. The rain had scarcely fallen forty-eight hours when the number of cases of fever was alarmingly increased in most parts of the city; and though a large proportion of these proved to be mild, many of them assumed a malignant character, and terminated fatally. At the beginning of September the number of cases of malignant fever had become considerable, and in a few days afterwards they were so prevalent that the disease might properly be pronounced epidemic. From this time till the latter part of October, the epidemic continued with more or less severity, according to the different states of the weather. The season at that period became so cool, and the cases so few and generally mild, that public apprehension in a great degree subsided.

The early cases of the disease were much dispersed over

the city, and chiefly consisted of foreigners. After the commencement of the epidemic, the great mass of cases for more than two weeks were mostly observed to take place on the eastern side of the town, on the low and made grounds, and in the same situations where pestilential sickness had most frequently arisen in preceding seasons. Before the 20th of September the disease began to spread on the margin of the North-River, and continued to prevail in Greenwich-street and the adjacent parts of the town till the close of the epidemic. A similar occurrence of cases near the North-River in the epidemic of 1803 had been ascribed by some to the removal of the shipping into that neighbourhood from the East-River. But the fallacy of this supposition was proved by a similar event taking place in the late season, and at the same period of the season, although no vessels capable of conveying the disease had been moved round to that part of the North-River.

In the progress of the epidemic a few cases were observed in Broadway and in some other parts of the city which in former seasons had been altogether or nearly exempted. Most of them were milder than such as occurred in the lower parts of the town. They were generally detached and solitary in the families where they happened, and often consisted of persons who had confined themselves to their own neighbourhood, and had never visited the sick. These circumstances, combined with others of a similar kind observed in many different situations, prove that the miasmata of low grounds may be wafted by the winds to a considerable distance from the place where they are generated.

The phenomena of the disease were not materially different from such as had been observed in preceding epidemics. In many cases the attack began with high inflammatory symptoms, which, in different instances, continued for a longer or shorter period; and, in not a few, with symptoms of prostration and malignancy which soon hurried on the fatal event. Sometimes it approached under the type of an intermittent, without exciting alarm till an advanced stage; and sometimes, after beginning with very slight appearances of indisposition, and showing very little of the character of fever, it only disclosed its pestilential aspect a short time before death. Dysentery, on some occasions, degenerated into yellow fever; and the latter occasionally into the former. Notwithstanding this insidious mildness of attack, and this instability of form in many cases, we hear physicians de-

claring that the character of the disease is always distinguishable at the beginning, and that it preserves throughout a uniformity of aspect. So far is this from being true, that all the best writers on pestilential diseases take notice of the deceitfulness of the rules of prognostic, and the want of proportion between the appearance of the symptoms and the danger of death.

In the treatment of the disease, little has been added to the experience of former seasons. In the numberless varieties which occur as to the mode of attack and the degree of violence, it must be expected that correspondent varieties in the plan of treatment, in the selection and combination of remedies, in the degrees of their force, and in the boldness or caution with which they are urged, will very frequently take place.

The dissection of dead bodies was attended to as often as the circumstances of the epidemic would permit. In these nothing more was discovered than the usual morbid appearances produced by this disease, such as have been frequently observed, and are found recorded in many books. In every case a large quantity of black matter was found in the stomach; and this viscus generally, together with the duodenum, and often more extensive portions of the intestinal canal, exhibited striking marks of disease. In the liver and lungs also morbid appearances were frequent; and in one case effusion of blood and gangrene had taken place to a very considerable extent in the latter.

The number of deaths in the city, at Bellevue, and at the Marine Hospital amounted to about three hundred; to which should be added an indefinite number, supposed to be about forty, who died after their retreat into the country. About six hundred cases were reported to the Board of Health.

Origin of the Disease.

As to the origin of the disease, though the facts in former seasons had been sufficient to convince all impartial inquirers of its generation at home, a much more deep and general impression of this truth has been made on the public by the circumstances of the late epidemic. Some additional restrictions of quarantine had been imposed by the Legislature in 1804; and the succeeding summer and autumn having been distinguished for a singular mildness of temperature, no malignant epidemic took place in any of the Atlantic cities of the United States, except at Charles-

ton (S. C.) where the heats of the summer had been unusually great. This happy escape being connected in respect to time with the extension of quarantine-restrictions at this port, many had been induced to consider them in the relation of cause and effect. They did not reflect that a similar escape was enjoyed by Baltimore, Norfolk, and other towns where no alteration in the system of quarantine had been attempted; and consequently that it was much more naturally to be ascribed to the remarkably moderate heat of the season, in which all the exempted towns had shared alike. With this confidence in the efficacy of quarantine, many people fondly assured themselves that no danger of an epidemic was to be apprehended. To all who observe correctly, it is well known that pestilential epidemics make their approach gradually. The process which engenders and matures the poison, arising from circumstances of season, soil, and filth, requires time to complete the operation. The persons first attacked are generally foreigners, or such as have been exposed to a powerful combination of morbid causes. This course of things was remarkably verified in the late season.

The advocates of the foreign derivation of the disease were reduced to great difficulties, in defending their opinion, by the total want of evidence in their favour, and by the stubbornness of the facts with which they were forced to contend. But their cause suffered still more by the weakness, inconsistency, and unskilfulness they betrayed in its defence. If they had been contented with leaving the protection of their doctrine to the old prejudices in favour of it, which were still cherished by many persons whose means of inquiry did not enable them to take a comprehensive view of the subject, they at least would have avoided some part of the discredit and mortification which they drew upon themselves. A little foresight and wariness, a slight acquaintance with the effects of season and temperature, a superficial recollection of the history of epidemics, and even a prudent degree of silence and reserve, would have spared them many of the humiliating mistakes into which they suffered themselves to be hurried.

The instances of malignant fever which occurred in the early part of July were asserted by these gentlemen to be merely the *common bilious fever* of the country. The case of Mr. Dougherty, the young Irishman mentioned in the preceding number, was in its last stage so unequivocally

malignant that they were forced to make the acknowledgment. But as none of the large number of persons who had intercourse with this patient during his illness contracted disease, it became necessary to assign a distinct origin for the cases which afterwards occurred. After the death of Dougherty, on the 30th of July, till the 5th of September, when the epidemic was formed, and the Board of Health had begun to report the number of the sick and dead, though in that interval more than a dozen persons had died with symptoms of the highest malignity, and a considerable number had been extremely ill, these gentlemen were loud, positive and vehement in asserting that no such disease existed in the city, and that the reports of it had been spread abroad by persons determined at every hazard to maintain the opinion of domestic origin. We cannot, in candour, deny our belief that they were honestly mistaken; and that their mistake principally arose from prejudice, want of information concerning the facts, want of judgment, and want of knowledge of the disease. As proof of their honesty in this error, it has been stated to us that they gave a decided opinion of the non-existence of the disease, at the beginning of the general flight into the country, to many of their most intimate friends and others, for whose safety they must have been anxiously interested.

While we admit, in some degree, the apology for this error, grounded upon the want of information concerning the cases, we contend, at the same time, that it was unpardonable to neglect, as these gentlemen neglected, to obtain a precise acquaintance with the facts in question. In order to assert with confidence, especially on a subject of moment, it is always requisite to be accurately informed; and whoever proceeds otherwise, trifles with the public as much as with himself.

It is difficult to calculate the extent of the injury to the public (and now that it is irreparable, it would be invidious) which arose from the mistaken assertions of the advocates of importation. Though they form only an extremely small minority among the physicians of New-York, and though the great majority were firm and decided in their declarations of the existence of the disease, yet much was effected, by dint of industry and positive assertion, to create doubt and distraction in the public mind. By their means the city was deprived of that precise and satisfactory intelligence concerning the progress of the disease, which it was greatly

interesting to their safety to receive without disguise. And in consequence of the delay of this intelligence many citizens were induced to postpone their removal into the country till it was too late to rescue their lives from destruction.

But the moment of delusion on this subject, as it respected the minds either of the framers or receivers of it, was necessarily of short duration. At the close of August and beginning of September, the disease began to assume its terrific aspect, and to advance with giant strides. The *common bilious fever* of the country had now become too frequent and too pestilential to be any longer misunderstood even by the non-medical part of the community. Even yet, the importers insisted that the disease only existed in the imagination of alarmists and enemies to the commerce of the city. And it was not till the 5th of September, when the disease had actually acquired an epidemic prevalence, and when the Board of Health had already begun to report deaths and cases, that the importers were reluctantly dragged to the confession of the existence of a disease, which they had just before most positively denied. It is to be hoped this mortifying confession, after such obstinacy of denial, will prove a lesson of modesty and humility to those who were compelled to make it; and in the minds of all others inspire a salutary distrust of the suggestions and advice of persons so ill qualified to direct public opinion in moments of emergency.

It is scarcely worth while to notice the ridiculous stories which have been circulated for the purpose of giving colour to the visionary belief of the importation of the disease. At one period it was given out, that contagion had been introduced by *rags from Algesiras;* and, at another time, by *old junk* from shipping lying at quarantine. It became necessary, however, to abandon these tales, when it was proved that none of the persons concerned in the conveyance of the *rags* or *junk*, or in bringing them ashore, handling, receiving, and storing them, had contracted the disease.

The next story set in circulation was that of clandestine intercourse, by night and day, between the quarantine ground and the city. But this proved equally unfounded upon strict investigation of persons, times, and circumstances. It appeared that the intercourse was not at all such as had been reported; that the bringing up of the articles had not been truly stated; and that, however this might have been, none of the persons charged with this clandestine intercourse had

been attacked with yellow fever, none of their families, nor any person with whom they had been directly or indirectly concerned. The diligence, circumspection, and vigilance of the Health-Officer in the execution of the laws deserve the highest praise.

Non-Contagiousness of the Disease.

If it had been possible to add any proofs of material importance to such as had formerly occurred, in order to establish the non-contagiousness of yellow fever, the late season would have supplied them. The more pestilential quarters of the city were early and suddenly deserted by the chief part of the inhabitants; they were so thinly peopled, and those few had so little intercourse, especially with the sick, as to convince any impartial observer that the disease did not spread by contagion. In the other quarters of the city, where a great number of inhabitants remained at their homes, the cases were also very sparse, the chief part were single in a house; and in a considerable proportion of the streets, viz. forty, only one death in each took place, and in thirty-one streets, only one case of sickness in each.

As in former seasons, no spreading of the disease was observed beyond the range of the vitiated atmosphere in the city. The breathing of this, without the least exposure to the effluvia of the sick, was sufficient to produce the disease; while, on the other hand, the greatest possible exposure to the effluvia of the sick, without breathing this impure air, was in no instance capable of communicating fever.

At the hospitals of Bellevue and Staten-Island, where cases of the highest malignity were collected, consisting generally of indigent persons, taken from the most pestilential quarters of the city, frequently from very filthy apartments, and often carried there in the foulest dress, nothing like contagion ever occurred. Physicians, nurses, visitors, servants, and attendants of every description, had unreserved intercourse with the sick, during the course of the whole season, without an individual of them contracting disease.

No practitioner of physic in New-York suffered any attack of this disease. As the members of the profession are numerous in this city, consisting of persons of all varieties of temperament and constitution, as the chief part of them were incessantly employed in attending the sick from morning till night, as their intercourse with their patients was close and unreserved, involving constant exposure to the contact,

breath, and effluvia of the sick, their escape is altogether inexplicable on the principle of contagion. The dissection of dead bodies, in which many of them were engaged, may also be mentioned as another part of their employment which they sustained without the least injury. The explanation given by the contagionists of the escape of persons attending the sick in the country or in hospitals, viz. that the air is too pure in these situations to serve as a conductor of contagion, cannot possibly be admitted in the case of the physicians in the city. Here they were not only exposed to all the effluvia of the sick, but were likewise immersed in all the impure air which is alleged to serve the purpose of conductor. Yet under all these unfavourable circumstances no harm ensued. But their more fortunate escape than in former seasons in reality admits of easy explanation. None of them lived in the pestilential districts of the city; and, though assiduously conversant with the sick, they seldom allowed themselves to breathe the air of those districts for any long portion of time.

The singular opinions of Dr. Chisholm are often adduced by the contagionists and importers in support of their doctrine. It is well known that this gentleman contends for the existence of a new and peculiar pestilential disease, which he supposes to have been imported from Boullam, on the coast of Africa, in the year 1793. He admits that the ordinary yellow fever of the West-Indies is not a contagious disease. Our contagionists here, assuming his opinion, assert that our epidemics are a continuation of the Boullam fever, and not of the ordinary yellow fever of the West-Indies. Such of our readers as wish to go minutely into this question, we refer to the luminous Essay on the subject by our late lamented colleague, Dr. E. H. Smith (see Med. Rep. Hex. i. vol i. p. 459, 3d edit.), and likewise to the acute remarks of Dr. Caldwell, of Philadelphia, on the same subject. (See his *Medical and Physical Memoirs*, p. 175.) In the transient notice of the subject which our limits at present will allow, we deem it sufficient to observe, that the leading facts concerning the supposed introduction of the Boullam fever into the West-Indies, are positively denied by Mr. Paiba, a gentleman of unblemished character, who was on board of the ship charged with the importation during the whole time of the voyage; that the whole narrative of the voyage, and of the disease pretended to have been imported, contains inherent evidence of mistake; that even if Dr. Chisholm's story be admitted,

it is only an instance of malignant disease generated in a ship, as he does not pretend to derive it from the Africans; that the malignant fever which now annually prevails in the West-Indies does not differ from that which prevailed there fifty years ago; and, finally, that Dr. Chisholm's statement of this subject is entirely rejected by the great body of physicians and people in the West-India islands. An instance of Dr. Chisholm's extreme incorrectness in the statement of facts on this subject may be seen in some remarks by Mr. Eckard, Danish Vice-Consul at Philadelphia, on his account of the introduction of the disease into St. Thomas's. (See Med. Rep. Hex. ii. vol. i. p. 336.) A proof likewise of there being no real peculiarity in the disease alleged to have been imported from Boullam, arises from the confession of Dr. Chisholm himself, that he had met with a similar disease, which he acknowledges to have been generated on board of a very filthy ship from Liverpool, in England, with a cargo of horses, which had touched at Surinam on the passage, in the summer of 1800. For his account of the origin of this disease, as well as its malignancy and fatality, see Med. Rep. Hex. i. vol. v. p. 229. At this rate of judging a new pestilence of unknown character, and endued with distinct and original powers of devastation, may be generated in every foul vessel; a doctrine which we trust that our medical readers are not yet prepared to admit.

We are confident the Boullam fever of Dr. Chisholm and the yellow fever of the West-Indies are precisely the same disease, with only such occasional variations of grade as are found in the different epidemic seasons of all pestilential distempers. We do not find that the ravages of pestilence in the West-Indies, since the pretended introduction of the Boullam disease, among a given number of Europeans or other strangers recently arrived, have been greater than they had been a few years before during the war of the American revolution. But admitting, for argument's sake, the distinction contended for by Dr. Chisholm, we assert that it is in his account of the ordinary yellow fever of the West-Indies, and not in that of the Boullam fever, that he has given an exact description of the disease prevalent in this city. Our disease had an incomparably closer resemblance of his yellow fever than of his Boullam fever.

Another insuperable difficulty awaits the followers of Dr. Chisholm. The yellow fever prevailed in this city, with great mortality in a particular neighbourhood, in the year

1791, nearly two years before the time of the supposed introduction of the Boullam disease in the ship Hankey. But anachronisms are among the smallest of the blunders committed by the importers of yellow fever.

We noticed in our last number the appearance of malignant disease at Philadelphia, New-Haven, and Providence. At the two latter places, by an early flight of the inhabitants from the low and noxious grounds where the disease originated, but few deaths took place. At Philadelphia the disease continued till cool weather; but was principally epidemic in Southwark, a borough continued from the lower part of the city. The deaths in that city and in Southwark amounted to between three and four hundred. Some cases were likewise observed at Newport, in Rhode-Island. At Norfolk, in the State of Virginia, and at Charleston (S. C.) the disease prevailed for some time; but to what extent, or with what degree of mortality we have not been particularly informed. It is understood likewise that sporadic cases were observed at Boston and Baltimore; and more or fewer probably took place in all the cities of the United States. The evidence of the domestic origin and non-contagiousness of the disease in all these places was abundantly satisfactory.

Pestilential cases of disease likewise occurred in many parts of the country. An account in the following letter of some instances of this sort at Schenectady has been obligingly put into our hands by James Fairlie, Esq. of this city.

DEAR SIR,

My absence from this place has occasioned some delay in answering your letter as speedily as I could have wished; immediately, however, on my return, the necessary inquiries were made respecting the boat's crew mentioned by you; the result you will perceive by the enclosed state of facts, furnished by Dr. Archibald H. Adams, of this place, who I believe is sufficiently explicit to give the requisite satisfaction.

It may not be amiss, in addition to his observations, to state, that two of the crew who fell victims to this malignant fever were taken, immediately after their arrival here, with headache, pain in their limbs, and sudden prostration of strength, followed by stupor and discolouration of skin, which continued several days, and until their dissolution.

It affords me great pleasure to contribute in the remotest degree towards obtaining any information which may be deemed useful; I shall, consequently, at all times receive

satisfaction to answer any inquiries made by yourself or the Resident Physician of your city on this or any other interesting subject within my power of answering.

With sentiments of respect
I am, dear Sir,
Your obedient servant,
JOSEPH C. YATES.

Schenectady, 12*th Nov.* 1805.
JAMES FAIRLIE, Esq.

Schenectady, 10*th November*, 1805.

SIR,

In answer to the inquiries respecting the boat's crew that arrived from Niagara, I would take notice of some circumstances that preceded their arrival at this place.

The crew (consisting of nine men and one woman) embarked at Niagara about the middle of August, and after sailing sixty miles, in consequence of an approaching storm, were obliged to run the boat into the mouth of Sandy Creek, where they were weather-bound four days. This creek empties itself into a marsh that is supposed to be one mile and an half in length, and of great breadth. The persons were soon impressed with the greatest apprehensions for their health, on account of the very offensive effluvia that were constantly exhaled from its surface. They were also informed by the few persons they met with there, that it was generally considered to be a place dangerous to health, and that five persons (the whole number that resided there last summer) fell victims to a malignant fever, which they termed the *lake-fever*. Three persons out of seven who resided there this summer, had died of the same fever, a very short time previous to the crew's arrival at this place; the rest of whom were determined to abandon the place immediately. The place in the vicinity of the marsh was uninhabited, except by the few persons above-mentioned; the rest of the country around was generally esteemed healthy. The country they passed through between Sandy Creek and Schenectady, was considered to be as healthy as usual at that season of the year.

A fortnight after leaving Sandy Creek, they arrived in Schenectady. A few of their number observed themselves indisposed a few days previous to this, but the most of them sickened from one to five days after this period.

Two of the number, whom I attended, sickened the first

and second day after arrival, and soon displayed symptoms of malignancy. They were attacked in the usual form, with rigors, alternating with excessive heat, severe pain of the head, back, and limbs for the first three or four days. During this period the eyes and skin acquired a very yellow colour, which continued many days. After this a sudden and alarming diminution of strength took place, accompanied with delirium, raving, strong twitchings of the tendons, and a stupor, which lasted between two and three days, when the symptoms assumed a more favourable aspect. The convalescence, however, proved extremely tedious in both, particularly Bartholomew Clute, who is still reduced to the necessity of lying in bed two or three hours daily, through debility, though more than two months have elapsed since the first attack. Some circumstances, however, intervened during his convalescent state, which, no doubt, impeded his improvement; such as frequent attacks of colic, accompanied with excessive vomiting, frequent attacks of severe head-ache (a complaint he has long been subject to), obstinate costiveness, &c.

Two other persons belonging to this party, whom I also attended, were taken in three days after their arrival here, with the usual symptoms of a remitting fever, and regained their health in thirteen or fourteen days.

I received my information with respect to several circumstances above noticed principally from Bartholomew Clute; having been disappointed in seeing Mr. John H. Moyston, who can, doubtless, confirm many of the particulars.

From Mr. Yates' humble servant,

ARCHIBALD H. ADAMS.

JOSEPH C. YATES, Esq.

A malignant fever also prevailed in some parts of Westchester and Dutchess, of Orange and Ulster counties in this State. At the town of Catskill we learn that the appearances of malignancy in some cases of fever were as unequivocal as those which took place in the year 1803. Dysentery appeared with violence and mortality in many parts of the State; and we observe in the public prints accounts of its prevalence in an alarming degree in many parts of the eastern States.

A more particular statement of facts on this subject may be expected in some of our future numbers.

System of European Quarantines, now in force against Vessels coming from Barbary, Egypt, Syria, the Archipelago, and the American States.

Ever since the yellow fever, growing with the growth of the American cities, became the subject of public alarm, it has been the fashion of the Boards of Health in the greater part of them to treat it as a *contagious* disease, and to derive it from some foreign place, generally from some West-India island, by *importation.* Acting under the influence of this unhappy and delusive notion, the cities of the northern and middle States have brought into operation a considerable part of the commercial restraints upon our trade to the southern ports of America, both on the continent and in the islands, that have been practised in the north-western ports of the Mediterranean Sea to prevent the introduction of the plague from Barbary or the Levant. There can be no doubt in the mind of the correct inquirer, that the prevailing opinions in the western and northern parts of Europe, concerning plague, are very erroneous; and that their boasted modes of keeping it out are grounded upon gross misconceptions of the nature of that distemper. The latest and best information from the Turkish cities, and other countries of the Mussulmen, assures us positively that the plague is not a contagious disease in these regions; and consequently the alarm and terror manifested by the Franks lest it should be brought among them, are visionary and unfounded.

Still it has been the misfortune of the United States of America, that the contagiousness of its malignant fever has been maintained with a pertinacity and zeal worthy of a better cause. The European regulations have been adopted as nearly as circumstances admitted, and our chief sea-ports on the Hudson, the Delaware, and the Chesapeake, have, like the southern harbours of Spain, France and Italy, had their quarantines and lazarettoes. But while our municipalities have been disputing and labouring twelve years about the importation of yellow fever from foreign parts, and charging sometimes one place and then another with being the nursery of a distemper too foul and horrid for them to own, they seem to have forgotten that the governments abroad must consider our country likewise as a source of pestilence. During the time that our Boards of Health were debating from what port, and in what vessel the specific poison was *imported to us*, the Health Committees of other places have

calculated with equal care and concern the probabilities of our *exporting it to them.* And considering the people of the United States, from their own proclamations, confessions, documents, and proceedings, as polluted with a distemper shockingly malignant and contagious beyond all example, they have found it necessary, as a means of self-defence, to put additional restrictions upon their commerce with a people so unclean and dangerous.

Accordingly the commercial nations, after patient attention to the reports made by our Boards of Health ever since 1793, and diligent consideration of all that their Ministers and Consuls have written them about the proceedings of the State Legislatures and the Town Councils, on the subject of these annual endemics of our soil and domestic productions of our climate, have been at length slowly and reluctantly convinced of their being caused by a subtile venom much more attenuated than the electric fluid, which, when introduced in the smallest proportion, can inoculate the inhabitants, explode their health into the air, make a conflagration of their happiness, and scatter them far and wide over the land. Alarmed by the bad character given to our country by its own inhabitants, and by the deadly contagion multiplied within it, and transported to all parts of the world, the European nations, from the Mediterranean to the White Sea, have secured themselves against the dangers of intercourse with the United States by a firm barricado of quarantine. And thus as one of the consequences of the doctrine that contagion inheres in the indigenous fevers of our climate, it is that the commerce of the United States has been subjected to the most inconvenient and expensive restraints, and the American States and the Barbary States classed together as too filthy and pestilential to have free intercourse with Christendom.

These restraints, brought upon us by our own imprudence, are likely to be more extensive and permanent than all the other vexations practised upon us by the belligerent powers. When the people of one country criminate those of another, the right of retaliation is seldom forgotten. And our illiberal reflections upon several foreign nations and their colonies, have brought upon us recrimination with a vengeance. At present, Spain, Italy, France, Portugal, Britain, Holland, Denmark, Prussia, Sweden, and Russia, look upon the Americans with a regard very little unlike that with which they behold the Turks. They have all given public

notice that quarantines are to be inforced against us. On examining these instructions, we find them to be in substance the same which exist in the regulations of the Health-Office of Marseilles. We have been politely favoured by that body with a copy of their *Reglemens du Bureau de Santè.* They fill two hundred and fifteen quarto pages, and are extended to such minuteness of detail, that they, considered universally, are the most finished performance of the kind. From this collection, rules of health and prevention may be copied for all the governments of the earth; especially as the new edition of 1792 comprehends as well the old code of 1730 as the additions made to it in 1786 and 1787. In the one hundred and third chapter of this elaborate work, there is a list of articles susceptible and unsusceptible of contagion. To the former class belong, *all sorts of wool; cotton-wool; twisted cotton; flax; hemp and tow, hair, silk, raw-silk; peltries, cloths, stuffs and draperies of all kinds; sponges; Morocco-leather; cordouan or tanned leather; dry leather; paper; stationary; books and parchment; quills, and untarred cordage, corals, beads thereof, and of glass in strings; toys, clothes, gilding upon thread, cotton, hair, wool or silk; artificial flowers; old wrought copper; scrapings of copper; medals of gold, silver and copper; money.* To the second or non-susceptible class belong, *drugs of all kinds; coffee and orpiment in bales, boxes or parcels; tobacco packed; rough coral; new wrought copper; hides salted and soaked; les lizaris; seeds and herbs for dyeing; wax; elephant's teeth, and euphorbium; pot-ash and salt-petre in parcels, cases and bales; liquorice-juice; glass-ware in boxes; galls; grain and legumes in bags;* with permission to start them on board and to carry to the lazaretto the empty bags only, at any time prior to the ten last days of the quarantine; but both these classes of merchandise, with the exception just mentioned, must be carried to the lazaretto for purification.

There is however another order of non-susceptible articles which may be left on board the vessel; *these* consist of *bread-corn, grain and legumes in bulk, or in bags de l'espart ou de natte; kelp, soda and barilla; oils; minerals; unwrought metals; dry and green fruits; rice; salted meats; wines and other liquors; tarred cordage; tallow after dipping it in the sea, and leaving it on deck when it is in skins or bladders, and these not to be taken off until the quarantine is ended; l'avelanede; horns of cattle and sheep, and shavings of horns.* But

none, even of these unsusceptible articles, are left on board, provided any case of plague occurred there after the cargo was embarked.

These regulations were substantially enforced by Spain long ago very rigorously; and by Portugal in a more moderate degree. But of late Great-Britain has put herself in an attitude of defence against the contagion of her late colonies, as appears by the following official publications:

" His Britannic Majesty's Consul-General for the middle and southern States of America, having lately received copies of an act passed in the last session of parliament ' for making further provisions for the effectual performance of quarantine,' and of his Majesty's order in Council of the fifth of April last, containing the regulations of quarantine, together with the form of declarations, and the certificates required by the forty second section of that order, and an abstract of the quarantine regulations, and the penalties to be incurred by neglect or disobedience of the same, in pursuance of the instructions he has received from his government, takes this means of making it generally known among the merchants of the United States, that all the goods enumerated in the first class of that order, intended to be imported, after the first day of February, 1806, into any port or place in Great-Britain, or the Islands of Guernsey, Jersey, Alderney, Sark, or Man, from any port or place on the continent of America, must be accompanied with the declarations, certificates, and bill of health required by that section of the order, or the ship or vessel importing the same, and the goods on board such ship or vessel, will be subject to the rules of quarantine, and will be obliged to perform the same, according to the directions of that order.

For the more satisfactory information of the merchants trading to Great-Britain, the articles enumerated in the first class of his Majesty's order in council are subjoined.

Apparel of all kinds, artificial flowers, bast, or any article made thereof, beads, bracelets, necklaces in strings, beads, bedticks, books, brooms of all sorts, brushes of all sorts, brudets, camblets, canvass, carmonia wood, carpets, cordage not tarred, cotton wool, cotton yarn, cotton thread, all articles wholly made or mixed with cotton, silk, wool, thread, or yarn, down feathers, flax, furriers waste, goats hair, gold or silver on thread, cotton yarn, woollen or silk, or any other substance herein before enumerated, grogram, hats, caps, or bonnets of straw, chip cane, or any other material, hemp,

hoofs, horn and horn tips, lutestrings, catlings or harpstrings, maps, matrasses, mats and matting, mohair yarn, nets, new or old, paper, pack-thread, parchment, pelts, plating of bast, chip cane, straw or horse-hair, quills, rags, sails and sail cloth, silk, viz. crapes and tiffanies, husks and krumbs, raw silk, thrown and organize silk, waste silk, wrought silk, skins, hides and furs, and part or piece of skins, hides and furs, whether undressed or in part or wholly tanned, tawed or dressed, sponges, straw, or any article made of or mixed with straw, stockings of all sorts, thread, tow, vellum, and all other goods whatsoever, if they shall have arrived in or with packages, consisting wholly or in part of any of the articles above enumerated, unless such goods shall be removed from such packages.

And further, it is requisite that such declarations recite in words at length, and in continuity, the several goods and articles, to be sworn to by the owner or proprietor before some magistrate of the port or place from which such vessel shall clear out, to be attested by such magistrate in the form prescribed, and also by his Majesty's Consul, or Vice-Consul, or by two known British merchants residing there.

His Britannic Majesty's Consul-General for the Eastern States of America begs leave to inform the merchants of New-York, that during the continuance of the present malignant fever, it will be necessary for the master of any ship or vessel clearing from this port to any port or place within his Majesty's united kingdoms of Great-Britain and Ireland, or the islands of Guernsey, Jersey, Sark, Alderney, or Man, to be provided with a Quarantine Manifest, prepared by the Commissioners of his Majesty's customs, by the direction of the Lords of his Majesty's most honourable Privy Council, the form of which is hereunto subjoined, and a copy deposited in the Custom-House at Greenwich.

THOMAS BARCLAY.

New-York, 17th Sept. 1805

QUARANTINE MANIFEST.

A list, schedule, or manifest of all articles of every description, whether shipped as baggage, presents, or otherwise, and of all packets, parcels, or letters on board the ship or vessel called master, now about to sail from the port of New-York, for the port of viz.

(here insert a correct account of every article on board.)

I *A. B.* master of the said ship or vessel, called the

do make oath, that the above written list, schedule, or manifest, contains a true and correct account of all articles of every description on board the said ship or vessel, or that are intended to be taken on board the same. *So help me God.*

Sworn before me, at on the day of 1805.

A. B.

T. B. Consul-General.

Or in the absence of the Consul—before us C. D. and E. F. known British merchants, resident at the port of New-York.

N. B. The original of this list, schedule, or manifest, is to be delivered to the Consul by the master of every ship or vessel liable to quarantine, to be transmitted by such Consul to the Commissioners of his Majesty's Customs in the port of London; and the master is to retain one or more true copies thereof in his possession, to be produced to the Collector or other principal officer of the Customs at the port of his arrival in the united kingdoms of Great-Britain and Ireland.

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Denmark has also judged it necessary to adopt similar means of safety for herself and her West-India possessions, as appears by the ensuing authorized documents.

An Ordinance, directing that Danish Masters of Vessels sailing from North-American Ports for Europe, shall provide themselves with Certificates of Health from the Danish Consul or Vice-Consul, at the Place of lading.

Copenhagen, May 15, 1805.

We, Christian the seventh, by the grace of God, King of Denmark, Norway, of the Wends and Goths, Duke of Sleswick, Holstein, Stormarn, and of the Dithmarshes, also of Oldenburg, &c. &c. make known by these presents:—Whereas, by the establishment of a complete quarantine regulation, we have taken care to secure our realms and dominions against the danger to be feared from pestilential epidemic disorders; so it is likewise our most gracious pleasure, that commerce and navigation should enjoy every alleviation which may be consistent with the important ends of these regulations. And whereas the great distance and the extensive coasts of the United States of North-America require particular measures of precaution, to be assured of the health of the places from whence vessels may arrive in our ports, if all the severity of the quarantine laws shall not in every instance be applied to them, we found ourselves induced, most graciously to ordain as follows, to wit:—

1. The Consuls appointed by us in the ports of the United States of America, and the Vice-Consuls subordinate to them, shall be obliged to supply all vessels of our subjects, which are destined to depart from the ports of their respective districts for Europe, after strict investigation, beside the bills of health issued by the proper authorities, with a particular certificate, whereby the state of health of the place, at the time when the vessel was lying there in lading, may be known with certainty; for which purpose, particular terms, according to which these certificates are to be made out, shall be forwarded to them.

2. Every one of our subjects, commanding a vessel, who is destined to sail with the vessel commanded by him, from any North-American port to any sea-port in our other European states, shall be obliged to demand such a certificate from our Consul or Vice-Consul at the place from whence he commences his voyage, under penalty of paying a fine of fifty rix dollars, which shall go to our quarantine establishment.

3. Whereas our Consuls and their Vice-Consuls in the ports of the United States of North-America are empowered, when thereunto required, to grant similar passports to American and other foreign vessels destined for our and other ports of the states bordering on the Baltic, there shall in future, and to commence from the time when the contents of this our ordinance shall have been made known in each place, no vessel arriving from North-America, although the same may produce a clean bill of health, have free admittance into any of the ports of our realms and dominions, unless she is provided, at the same time, with such a certificate from our Consul or Vice-Consul, which shows, that the same is absolutely not subject to any suspicion.

In the contrary case, she shall be considered as suspected of a contagious disorder, and shall be subjected to the treatment directed in the quarantine law of our dominions, &c.

According to which, all those concerned have most humbly to conform themselves.

Given in our royal Residence of Copenhagen, the 15th May, 1805.

CHRISTIAN R.
SCHIMMELMANN
SEHESTEDT
EWALD
YUNGBERG
WINDELBOE
C. WINTHDR.

Danish Consul's Office,

Philadelphia, 21st Sept. 1805.

To prevent misapprehensions being entertained concerning the nature and execution of the new quarantine regulations within the Danish European dominions, which are established upon principles of facilitating commerce as much as possible, consistent with the end of any such regulation—the following limitations in regard to time, and specification of goods which are thought liable to carry infection, are hereby made public.

1. Vessels coming from any country under suspicion of being infected with contagious disease, but having bills of health in perfect order, no dangerous goods, nor any sick at the time, or during the passage, and no recent communication with vessels from the Barbary coast, will have to perform a quarantine observation for four days.

2. Vessels under similar circumstances, but coming from an infected place, consequently without bills of health, fourteen days.

3. A vessel having a few dangerous goods on board, such as can be aired and purified on board, without unloading the cargo, coming from an infected place, forty days.

4. Such a vessel, having many dangerous goods from an infected place, or having actual contagion or pestilential diseases on board, must proceed to Christiansand, in Norway, there unload within the limits of the quarantine ground, and undergo the prescribed purifications during forty days or longer, according to circumstances; where also such goods as are of a nature to carry infection will, in this case, be burned.

5. Vessels without a cargo or in ballast, from an infected place, (or having had communication with a vessel from the Barbary coast) if thirty days have elapsed since, and no sickness has appeared, will perform a quarantine of four days, or as many more as there may be deficiency in the stated thirty days.

The following Goods are considered as dangerous, or liable to carry infection.

Wool, cotton, silk, bast, hair, feathers, quills, down, flax, hemp, straw, sponge, and all articles manufactured thereof; paper, books, and cordage which is untarred, &c.

Further, hides, skins, peltry, leather, parchments, and all that is manufactured and composed of these materials.

Further, such animals as are clothed with wool, hair, bristles, or feathers, as also their horns and bones in raw state.

Also cochenelle, rasped dye woods, and coals of every kind.

Not dangerous are estimated:

1. Grains of all kinds, viz.

Wheat, buckwheat, rye, barley, oats, rice, corn, &c. pulse, pease, beans, &c. and

Whatever is prepared and composed from grain, viz. Flour, groats, starch, bread, &c.

2. Beef, pork, fish, of every preparation; also butter, cheese, lard, honey, other like nutriments and tallow.

3. Fruits of all different kinds; also coffee, cocoa nuts, almonds, &c. Further, potatoes, roots, vegetables, &c.

4. Liquids, as water, oil, distilled liquors, and liquid preparations of different kinds.

5. Spices of all kinds, drugs, medicines, plants, tea, tobacco, hops, and every article derived from plants, which has not already been excepted.

6. Wood, and every thing derived or manufactured from it, except rasped dye wood; coals, ashes, gums, tar, rosin, &c.

7. China, potters' ware, metals of all kinds, (except coin) alum, vitriol, paints, brimstone, charcoal, &c. &c.

When goods not liable to carry infection are packed in dangerous articles, such as straw, then the whole is considered as dangerous until the package is separated from it.

I. F. ECKARD.

Since the publication of these formidable manifestoes, the merchants of the United States have been further informed that Sweden, Russia, and Prussia, have entered into the association to guard their respective dominions from North-American contagion, by quarantining our vessels in the ports of the Baltic. This was announced in the note which is subjoined.

BALTIC TRADE.

His Danish Majesty's Consul for the Middle States of North-America, pursuant to his directions received, gives further notice to the concerned, that every vessel trading from the United States to any port in the Baltic has occasion for a bill of health, issued by the competent authorities,

and certified by a Consul or Vice-Consul in due form, if they will not undergo a quarantine of longer or shorter duration according to circumstances; and an agreement has been entered into between the powers of Denmark, Sweden, Russia, and Prussia, that in case no Consul or Agent of their own nation resides at the place of the departure of the ship, the certificate shall be valid, if signed by the Consul or Vice-Consul of any other of the above named powers.

I. F. ECKARD.

Philadelphia, Oct. 31, 1805.

And to add to our melancholy reflections on this subject, the United Netherlands have given notice, that the occurrences in the sea-ports of our Atlantic States, have provoked them to enter upon a system of defence against the importation of our contagious distempers, similar in the main to the preceding.

All this alarm to the nations, and inconvenience to ourselves, springs from the fundamental error, that the yellow fever is imported from foreign places; that it is contagious in a most fearful degree; and, consequently, that it can be exported to all places where our extensive commerce reaches. All which positions are unfounded in fact, the distemper being of domestic origin, being non-contagious, and our neighbours being in no danger whatever of receiving it from us in produce or merchandize.

New Edition of Dr. Rush's Medical Inquiries and Observations.

We congratulate our readers on the publication of the second edition of *Professor Rush's* MEDICAL INQUIRIES AND OBSERVATIONS, in four volumes octavo. This edition has been carefully revised by the author, and greatly augmented by the addition of new matter. He has brought down his account of the malignant epidemics of Philadelphia to the present time. The importance of the first edition of this work has been too well known to our readers to make any observations on the subject necessary in this place; but the value and excellence of the new materials in this second edition are so conspicuous, that we trust no physician in the United States, or wherever our language is understood, will neglect to have this work in his own hands.

Translation of Senac on Fevers.

Messrs. Kimber, Conrad, and Co. of Philadelphia, have

lately issued proposals for publishing by subscription, *A Treatise on the hidden Nature and the Treatment of Intermitting and Remitting Fevers; illustrated by various Experiments and Observatians; in two Books; by* JEAN SENAC, *M. D. Translated from the Latin, with Notes, by Charles Caldwell, M. D. And a recommendatory Preface by Benjamin Rush, M. D. &c.* The merits of this work are so universally acknowledged, and the matter it contains so applicable to the state of this country, that we cannot doubt that the circulation of it will be very extensive.

New Chemical Work.

It is with much satisfaction that we announce the plan of a new work, lately undertaken by THOMAS EWELL, M. D. of George-Town, District of Columbia, to be entitled, "*Plain Discourses on the Chemical Laws of Matter;*" and to contain a general view of the principles and improvements of the science of Chemistry, with a particular detail of those parts which are practical and connected with domestic affairs. The work will be put to the press as soon as a sufficient number of subscribers are obtained. It will be comprised in about 500 pages octavo, and be printed on good paper, with suitable type. A general index will be annexed to the work, with proper drawings of the apparatus commonly used by chemists.

This gentleman has already distinguished himself by some ingenious and learned performances. The zeal and enterprize he displays in scientific pursuits give a pleasing earnest of what his country may hereafter expect from the application of his talents to professional objects, or any other by which public good may be advanced.

Epitome of the Diseases of Children.

Dr. William Heberden, Physician Extraordinary to the King and Queen of Great-Britain, and one of the Members of the National Board of Health, lately instituted, has presented to Dr. Miller a new and interesting work lately published by him in the Latin language, entitled, "*Morborum Puerilium Epitome.*" Medical learning and judgment, as well as classical elegance, are equally displayed in this excellent performance. The hereditary eminence which this gentleman derives from his late illustrious father is fully supported, and greatly extended, by his own talents and contributions to professional knowledge; and every man of taste must be gratified to ob-

serve how carefully both these physicians have cherished the elegancies of ancient learning, amidst all their devotedness to severer studies and the laborious duties of the practice of physic.

French Works on the Plague.

To the kindness of our excellent friend and correspondent Dr. Valentin, of Marseilles, we are indebted for transmitting to us two valuable French works on the plague, viz. "*Relation Historique de la Peste de Marseille, in* 1720, by M. BERTRAND, M. D. &c." and PAPON's celebrated work "*De la Peste, ou Epoques Memorables de ce Fleau, et Les Moyèns de s'en preserver;*" in two volumes.

Board of Health at Marseilles.

Through the hands likewise of Dr. Valentin, we have received from the venerable and learned BOARD OF HEALTH at Marseilles, a work comprising a minute and complete account of that celebrated establishment, entitled, "*Reglemens du Bureau de Santé de Marseille. D'apres ceux de* 1730, *des Supplemens de* 1786 *et* 1787, *augmentés des Deliberations Reglementaires, consignées dans les Regitres de ce Bureau, des Instructions les plus exactes, des devoirs des Conservateurs de Santé et des Officiers et Employés de cette Administration, ainsi que de la Description des localités du Lazaret de Marseille.*"

By the liberality of the Board, and by their express orders, this work was forwarded to us, and came authenticated under their great seal. It is needless to observe that it is a book of great curiosity, and presents a more full view of the subject than any other now extant.

FOREIGN.

Contraction of Water by Heat.

DR. Charles Hope has laid before the Royal Society of Edinburgh an account of experiments, with observations, upon the contraction of water by heat at low temperatures. It has been long known that heat, when applied to water at the temperature of 32 deg. causes a diminution in the bulk of the fluid. The water contracts, and continues to contract, with the increase of temperature, till it reach the 40th or 41st degree. Between this point and the 42d

or 43d, it suffers scarcely any perceptible change; but when heated beyond this, it expands in proportion to the heat communicated.

The author concludes, that the general import of his experiments is, that water which is ice-cold, or a few degrees warmer, when heated becomes specifically heavier; that water of 40 deg. when heated becomes specifically lighter; that water above 40 deg. by the loss of heat, or by cold, is rendered specifically heavier; and that water below 40 deg. is by the same cause rendered specifically lighter. Hence heat in low temperatures causes water to contract, and at superior temperatures to expand; and Dr. H. thinks that the point at which the change in the constitution of this fluid in relation to heat takes place, lies between 39½ and 40 degrees.

Radical of the Muriatic Acid.

M. Pacchiani, of Pisa, has discovered that the radical of the muriatic acid is hydrogen. By taking from water, by means of the Galvanic pile, a portion of its oxygen, he asserts, that the water was converted into oxymuriatic-acid, and that consequently muriatic-acid is hydrogen at its minimum of oxidation; the oxymuriatic-acid, hydrogen in the middle state; and water, hydrogen at its maximum of oxidation.

Precipitation of Metals from Alkaline Solutions.

It has long been known that the metals precipitate each other from acids in their metallic state. Iron, for instance, may be employed to throw down copper, and copper to precipitate silver. But it has not been suspected till lately, that the same precipitations may be obtained when the metals are dissolved in alkalies; provided always that metals are employed whose oxides are soluble in alkalies.—KLAPROTH has lately published a set of curious experiments on this subject.—Lead was precipitated in the metallic state, by introducing a cylinder of zinc into a solution of oxide of lead in pot-ash. The same result was obtained when zinc was put into solutions of oxides of tin and tellurium in the same alkali, and into the solutions of oxides of copper and of tungsten in ammonia. This last result points out an easy method of reducing the very refractory metallic oxides to the metallic state.